Unions reveal their wealth

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BUSINESS WEEK

A McGRAW-HILL PUBLICATION FIFTY CENTS JUNE 4, 1960

STORAGE COLLECTION

Jim Walter makes profits from the shell of a house and the financing that goes with it. (Finance)

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Now modern interior coatings spread so smoothly, spray so easily, that they almost seem to paint by themselves. What's the helping hand? *Shell glycerine . . . basic ingredient for alkyd resins.*

In home or factory, tough, colorful coatings based on glycerine-derived alkyd resins grip tightly to surfaces . . . form a rugged coating that shrugs off wear.

And glycerine helps put the shine on your shoes, the kick in explosives, the flex in cellophane. It is used in more than 1500 products—ranging from cosmetics and candy to toothpaste and textiles.

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Shell Chemical Company

Chemical Partner of Industry and Agriculture

NEW YORK

SHELL

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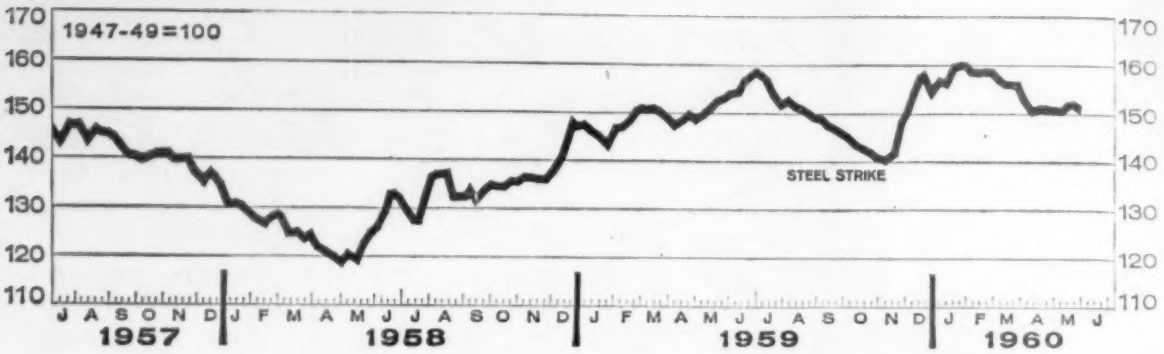
NUMBER 1605

FIGURES of the WEEK

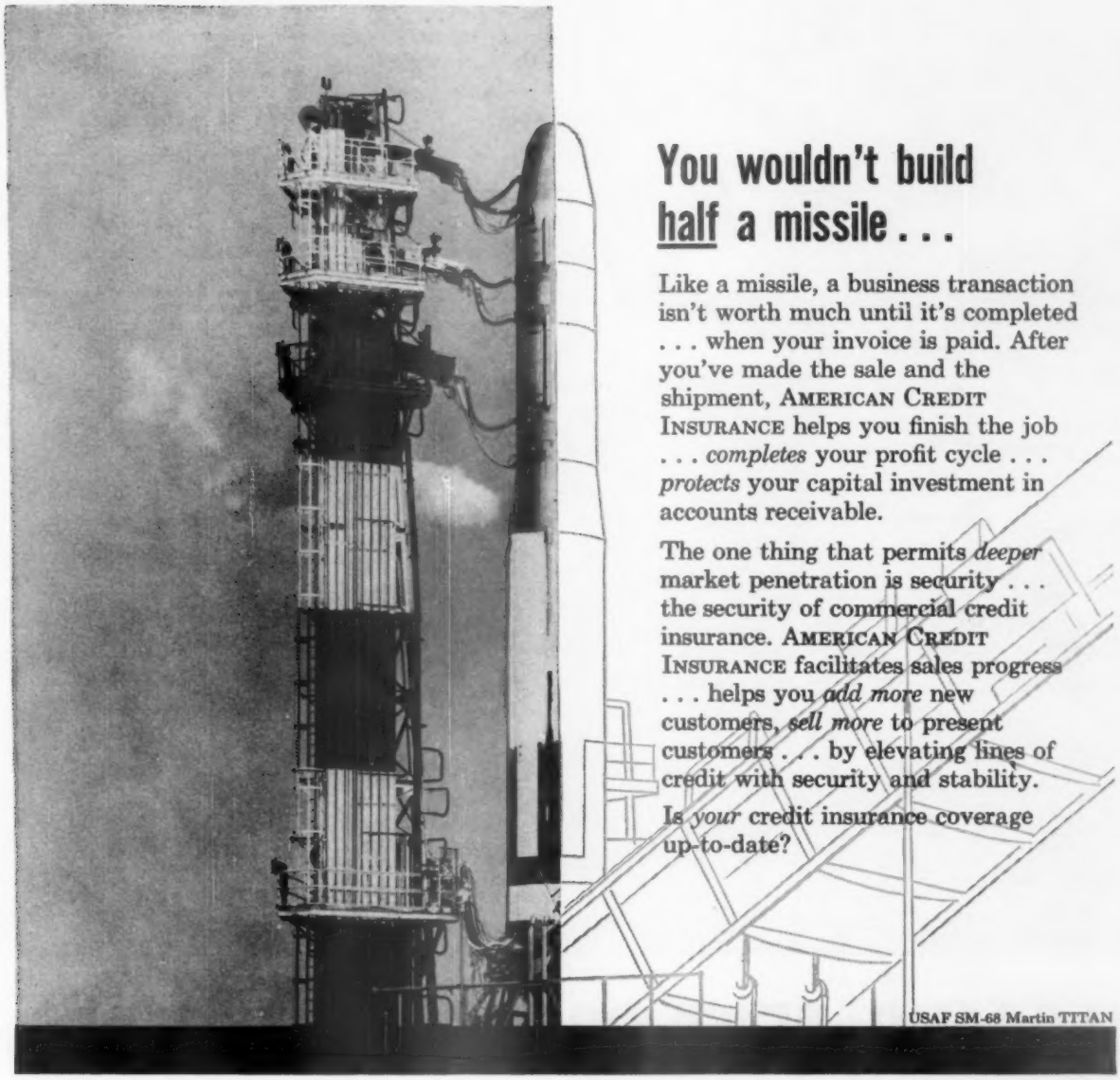


	1953-55 Average	Year Ago	Month Ago	Week Ago	§ Latest Week
BUSINESS WEEK INDEX (chart)	**133.3**	**154.7**	**152.7**	**152.8r**	**151.7***
PRODUCTION					
Steel ingot (thous. of tons)	2,032	2,653	2,137	1,870r	1,765
Automobiles	125,553	117,372	135,515	155,755r	144,092
Engineering const. awards (Eng. News-Rec. 4-wk. daily av. in thous.)	$52,412	$81,705	$90,810	$75,140	$83,519
Electric power (millions of kilowatt-hours)	10,819	12,778	13,300	13,468	13,572
Crude oil and condensate (daily av., thous. of bbl.)	6,536	7,203	7,014	6,864	‡‡
Bituminous coal (daily av., thous. of tons)	1,455	1,417	1,433	1,376r	1,394
Paperboard (tons)	247,488	326,467	307,102	325,053	310,595
TRADE					
Carloadings: mfrs., miscellaneous and l.c.l. (daily av., thous. of cars)	70	65	60	61	60
Carloadings: all others (daily av., thous. of cars)	47	49	45	46	46
Department store sales index (1947-49 = 100, not seasonally adjusted)	121	139	146	134	138
Business failures (Dun & Bradstreet, number)	198	264	325	313	299
PRICES					
Industrial raw materials, daily index (BLS, 1947-49 = 100)	89.2	92.3	91.9	93.5	93.1
Foodstuffs, daily index (BLS, 1947-49 = 100)	90.5	82.1	76.6	77.0	77.3
Print cloth (spot and nearby, yd.)	19.8¢	19.2¢	20.7¢	20.9¢	21.1¢
Finished steel, index (BLS, 1947-49 = 100)	143.9	186.7	186.8	186.8	186.8
Scrap steel composite (Iron Age, ton)	$36.10	$37.17	$33.17	$32.50	$32.50
Copper (electrolytic, delivered price, E&MJ, lb.)	32.394¢	31.515¢	33.000¢	33.000¢	32.600¢
Aluminum, primary pig (U. S. del., E&MJ, lb.)	20.6¢	24.7¢	26.0¢	26.0¢	26.0¢
Aluminum, secondary alloy #380, 1% zinc (U. S. del., E&MJ, lb.)	††	22.83¢	25.04¢	25.02¢	25.02¢
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)	$2.34	$1.98	$2.10	$1.97	$1.98
Cotton, daily price (middling, 1 in., 14 designated markets, lb.)	34.57¢	34.63¢	32.16¢	32.20¢	32.20¢
Wool tops (Boston, lb.)	$1.96	$1.82	$1.75	$1.72	$1.70
FINANCE					
500 stocks composite, price index (S&P's, 1941-43 = 10)	31.64	58.19	55.19	55.73	55.79
Medium grade corporate bond yield (Baa issues, Moody's)	3.59%	5.02%	5.25%	5.28%	5.28%
Prime commercial paper, 4 to 6 months, N. Y. City (prevailing rate)	2-2⅛%	3⅜%	4¼%	4¼%	4¼%
BANKING (Millions of Dollars)					
Demand deposits adjusted, reporting member banks	‡‡	60,938	60,702	58,040	58,292
Total loans and investments, reporting member banks	‡‡	102,449	103,055	102,914	102,700
Commercial, industrial, and agricultural loans, reporting member banks	‡‡	32,835	31,841	32,141	32,094
U. S. gov't guaranteed obligations held, reporting member banks	‡‡	31,277	25,991	25,790	25,774
Total federal reserve credit outstanding	26,424	27,548	27,234	27,480	27,338

MONTHLY FIGURES OF THE WEEK		1953-55 Average	Year Ago	Month Ago	Latest Month
Private expenditures for new construction (in millions)	**May**	$2,390	$3,287	$2,944	$3,168
Public expenditures for new construction (in millions)	**May**	$980	$1,468	$1,187	$1,367
Manufacturers' inventories (seasonally adjusted, in billions)	**April**	$45.2	$51.1	$54.3	$54.6

* *Preliminary, week ended May 28, 1960.*
‡‡ *Not available.*
r *Revised.*
§ *Date for 'Latest Week' on each series on request.*

THE PICTURES—Cover—Herb Kratovil; 25, 26, 27—Jim Mahan; 32—Joan Sydlow; 45—Bud Blake; 52—Mike Shea; 66, 67, 68—Herb Kratovil; 88, 89, 92, 94, 97—Joan Sydlow; 98, 99—NASA; 100—Ed Nano; 121—WW; 124—Eddie Van der Veen; 134, 135, 136, 138—Herb Kratovil; 141—GE; 144—Herb Kratovil



USAF SM-68 Martin TITAN

You wouldn't build half a missile . . .

Like a missile, a business transaction isn't worth much until it's completed . . . when your invoice is paid. After you've made the sale and the shipment, AMERICAN CREDIT INSURANCE helps you finish the job . . . *completes* your profit cycle . . . *protects* your capital investment in accounts receivable.

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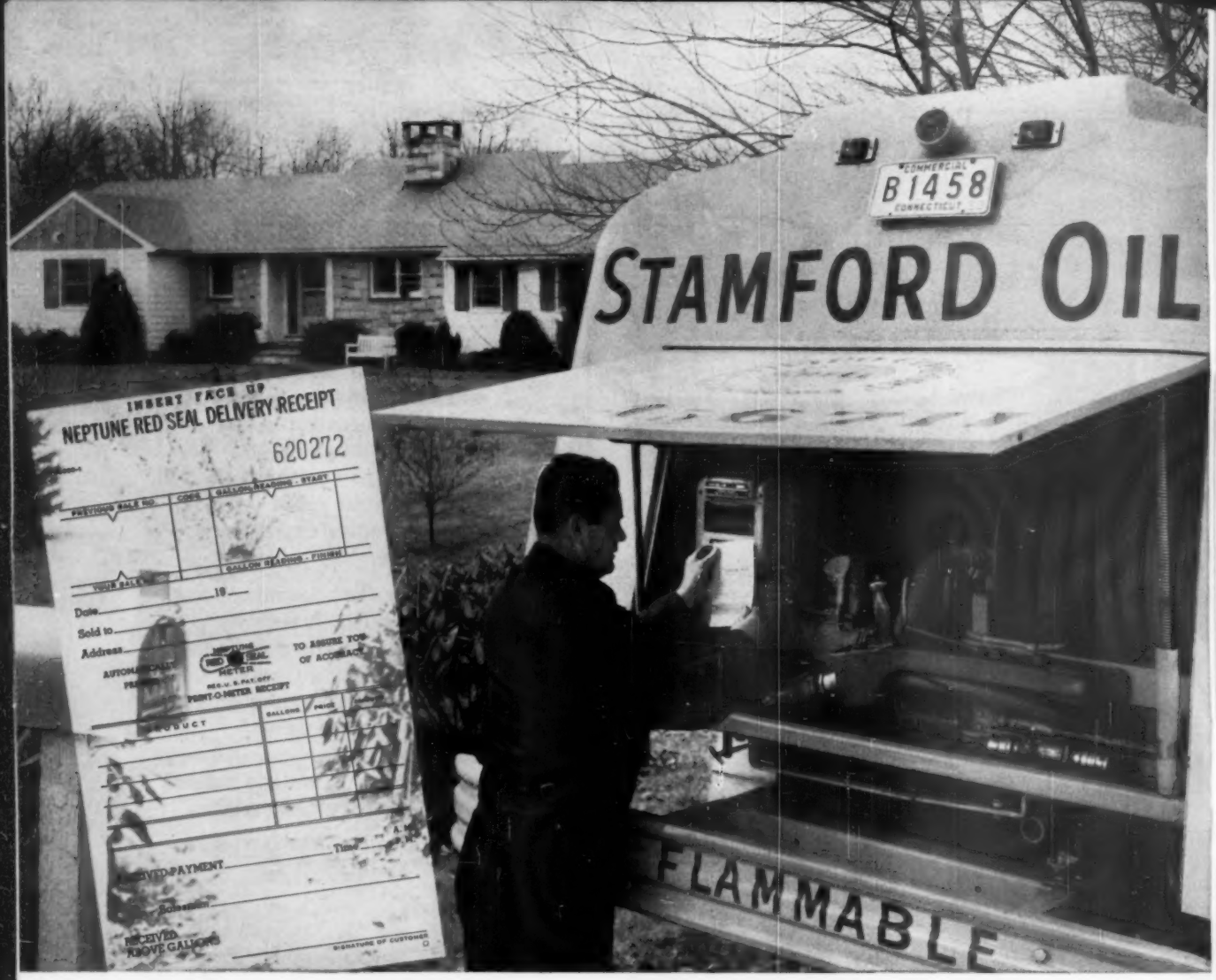

OILDOM'S BEST GOOD-WILL BUILDER

neptune
for a better measure of profit

Honest delivery is the best good-will builder for any business, but the fueloil business has it solved in neater fashion than most.

In the early days, fueloil deliverers laboriously counted hand-laden buckets of oil, while Mr. Customer prudently lurked in the background. In 1923, at the Cadillac Garage in New York, a new concept of selling gasoline and oil was unveiled. It was an oil meter . . . outgrowth of Neptune's long experience in metering water.

Today, the meter has created such a fine feeling of trust that the housewife scarcely even notices the truck's comings and goings. She accepts with confidence the *meter-printed* receipts slipped into her mailbox. The oil business has thrived on this "certified delivery."

More fueloil trucks are now equipped with Neptune than any other make of meter . . . another example of Neptune's ability to meet industry's measurement needs . . . with accuracy.

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READERS REPORT

Flimsy Products?

Dear Sir:

". . . The irony of flimsy consumer goods in the space age 1960 has not been lost on lunik-minded Russians" [BW—May21'60,p172].

"(U. S.) manufacturers are raising their quality sights as the consumer demands more complex products that work" [BW—May 21'60,p187].

What I would like to know is, are those Reds getting ahead of us in the manufacture of bad consumer products, or vice versa?

JOHN E. ULLMANN
ASST. PROF. OF ECONOMICS
OF ENGINEERING
STEVENS INSTITUTE OF TECHNOLOGY
HOBOKEN, N. J.

Fair to Both Sides

Dear Sir:

Just a note to tell you that we enjoyed your article on Case [BW—Apr.30'60,p54].

As you know, it was the first article to appear that gave some of the facts behind my resignation. It is extremely well written and quite fair to both sides, assuming the figures given by Mr. Grede will be anywhere close to actual performance . . .

MARC B. ROJTMAN
PARIS, FRANCE

Disability Insurance

Dear Sir:

A sincere vote of thanks to the writer of your Personal Business section [BW—May14'60,p157]. His strong emphasis on the importance of disability income insurance echoes the gospel my company has been preaching since its founding in 1909.

The breadwinner's earned income has to pay the way for the entire family, and deserves first consideration in any insurance program.

RALPH E. STALEY
SALES DIVISION
MUTUAL OF OMAHA
OMAHA, NEB.

Dental Insurance

Dear Sir:

Found your article concerning health insurance very informative [BW—May14'60,p157].

However, I felt that you could have given this article more value and coverage with some informa-

your profit potential is great... UPSTATE

Plenty of plant sites with husky profit potential are waiting for you in **UPSTATE, N.Y.**

Here, in the 22,000 square miles served by Niagara Mohawk, nearly every type of industry can find the plant site admirably suited to its needs...the site from which to serve the richest market in the world...the great Northeast.

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Before you choose a plant site, learn all the advantages waiting for you in Upstate, N. Y.: a wealth of natural resources... plenty of low-cost electric power...abundant water... a solid labor force...a most attractive political and economic climate ...healthy, diversified industrial neighbors prospering here. Transportation is particularly attractive; the growing network of superhighways, the St. Lawrence Seaway, the barge canal and excellent rail and air service combine to provide fast, dependable access to the rich northeastern market and Canada and to the seaports of the world.

For complete information on the services we offer...and for concrete help in your search...write, wire or phone Director of Area Development, Niagara Mohawk Power Corporation, Dept. BW-1, 300 Erie Blvd. West, Syracuse 2, N. Y.

NIAGARA MOHAWK

BUSINESS MANAGED • TAXPAYING

tion on "dental insurance" . . . here is an area of health insurance not covered (to my knowledge) by health insurance plans or Blue Cross although perhaps this may not be true of full mouth extractions . . .

WILLIAM GILL
NORTH READING, MASS.

Timely Article

Dear Sir:

The partners of our firm thought your article on steel stocks [BW—May14'60,p145] was particularly timely and well prepared. We were, therefore, very pleased to note that you mentioned our research work in connection therewith . . .

HAROLD P. GOODBODY
GOODBODY & CO.
NEW YORK, N. Y.

Help for Families

Dear Sir:

We read with great interest your excellent and understanding article on alcoholism [BW—Apr.16'60, p165]. Since there was no mention of the Al-Anon Family Groups, I thought you might be interested in hearing about them.

The Al-Anon Family Groups are composed of the wives, husbands, relatives and friends of both recovered and active alcoholics. They have banded together to learn more about the disease of alcoholism, how to live with their problems and help others with an active alcoholic problem in the home. The program is based on the 12 suggested steps of Alcoholics Anonymous as applied to the non alcoholic.

At present there are over 1,500 family groups in the United States, Canada and 20 foreign countries. The movement is growing rapidly and many members have found a happier way of life even though the alcoholic is still drinking. Also families of the recovered alcoholic have come to face their own character defects, forget the past and fear of the future, and live in the happiness of today.

. . . Since many distressed spouses and children do not know where to turn to for information and help, we are only too happy to spread the word of Al-Anon. Like AA there are no dues or fees connected with any group and all are welcome.

ELEANOR ANDERSON
AL-ANON FAMILY GROUP HEADQUARTERS INC.
P. O. BOX 182
NEW YORK 10, N. Y.

What's NEW in Mechanization

AUTOMATIC DRYER SAVES TIME—Pharmaceuticals formerly batch-processed now are dried continuously by this Jeffrey vibrating dryer. Processing time was cut 50%, as the dryer automatically handles 300-400 pounds of materials per hour. Jeffrey's experience in drying, cooling and processing materials can help you cut costs.

TEARS UP RUBBER—Called a "Disintegrator", this Jeffrey machine plays an important part in synthetic rubber production. Part of a continuous process line, it rips and tears slabs of wet rubber into small size chunks for efficient drying. Jeffrey offers a complete line of machines to reduce soft or rockhard materials efficiently.

MINES COAL IN A 3-FOOT TUNNEL—This continuous mining machine, a Jeffrey Colmol, is only 25¼ inches high. It's designed for high performance in thin seams of coal; boosted output in this mine 200% per man. Jeffrey not only makes a full range of coal mining machinery, but system-engineers it to the job for top performance.

Jeffrey serves *every* basic industry with *mechanization* . . . conveying and processing equipment, transmission and mining machinery. Sales-engineering service world-wide; standard products stocked by authorized distributors.

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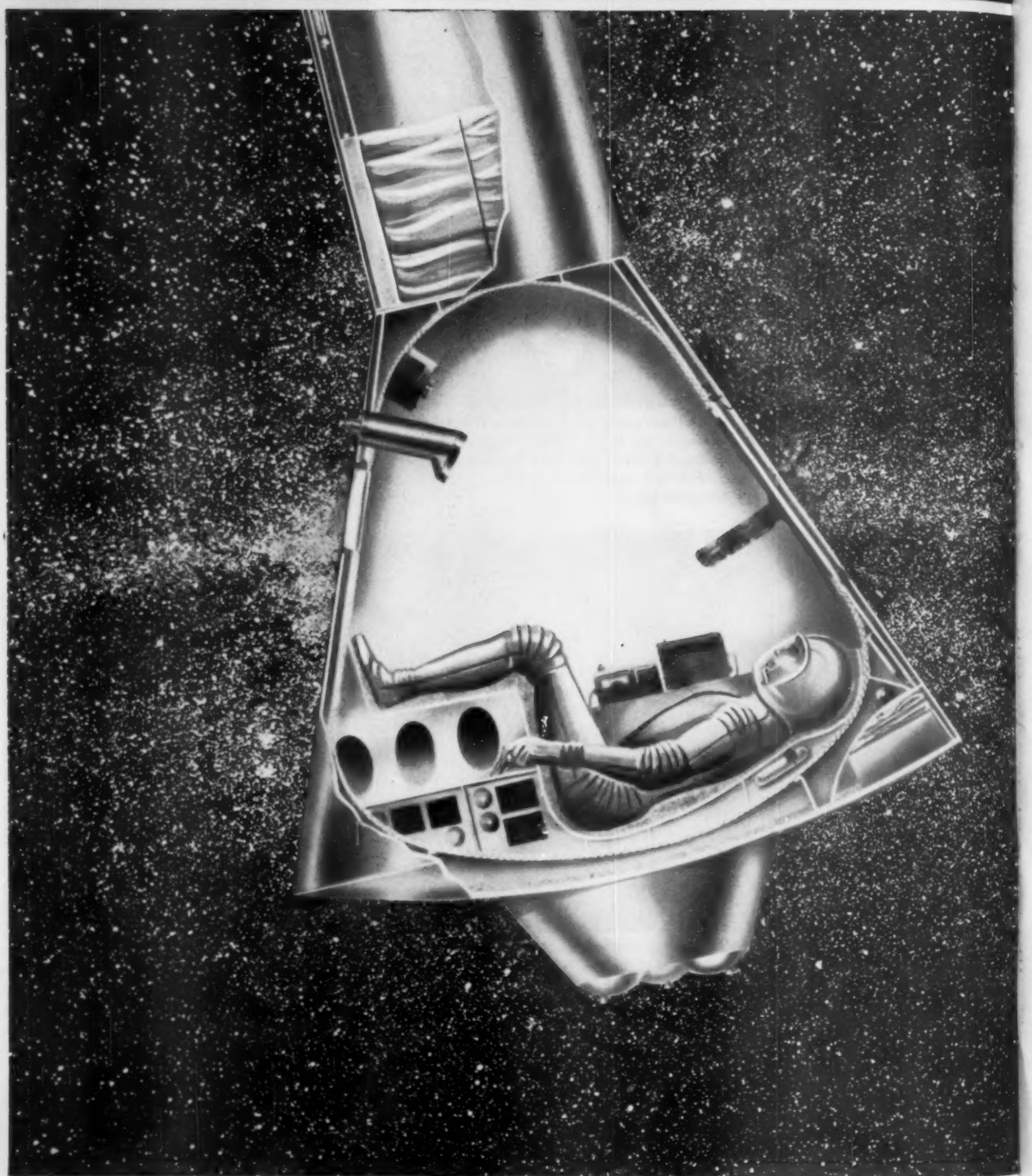


PROJECT MERCURY SPACE CAPSULE, being developed by the McDonnell Aircraft Company, will orbit the earth with a human pilot. Western Electric was selected by the National Aeronautics and Space Administration to head up the industrial team that is building the world-wide tracking and ground instrumentation network necessary to keep in contact with the space capsule.

SPACE-AGE COMMUNICATIONS

As the space-age becomes a reality, Western Electric's arsenal of communications experience continues in the service of the nation . . . tracking astronauts and missiles in space and shielding the nation with far-flung electronic networks.

Because of our vast background in handling complex electronic and communications projects for the Bell Telephone System, the Government has selected Western Electric as prime contractor on vital military communications, defense and tracking networks.

With high-speed intercontinental bombers in the '50s came the urgent need for electronic warning systems. When the Air Force decided to build a fence of radar stations across the Arctic, Western Electric was named prime contractor and completed the massive project in just 32 months. This Distant Early Warning (DEW) Line—since extended to the Aleutian Islands and soon across Greenland—will stretch 5,000 miles in our defense.

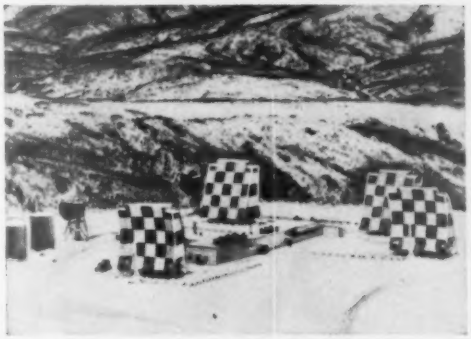
We have also been asked to provide management services for the construction of the Semi-Automatic Ground Environment (SAGE) System and to design and build the rearward communications for BMEWS. SAGE will be a complex of inter-connecting computers, radars and other equipment making up electronic ground environment in each Air Defense Sector. BMEWS will use long-range radar installations for rapid warning and precise, trajectory predictions of enemy ballistic missiles.

W.E. has been recently named by the National Aeronautics and Space Administration to lead an industrial team which is engineering and installing the global tracking and control system for manned space vehicles. This is "Project Mercury," planned for next year to orbit an astronaut 120 miles in space.

We at Western Electric are indeed proud to help provide the United States with the best military communications, warning, and tracking systems that modern science can achieve.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

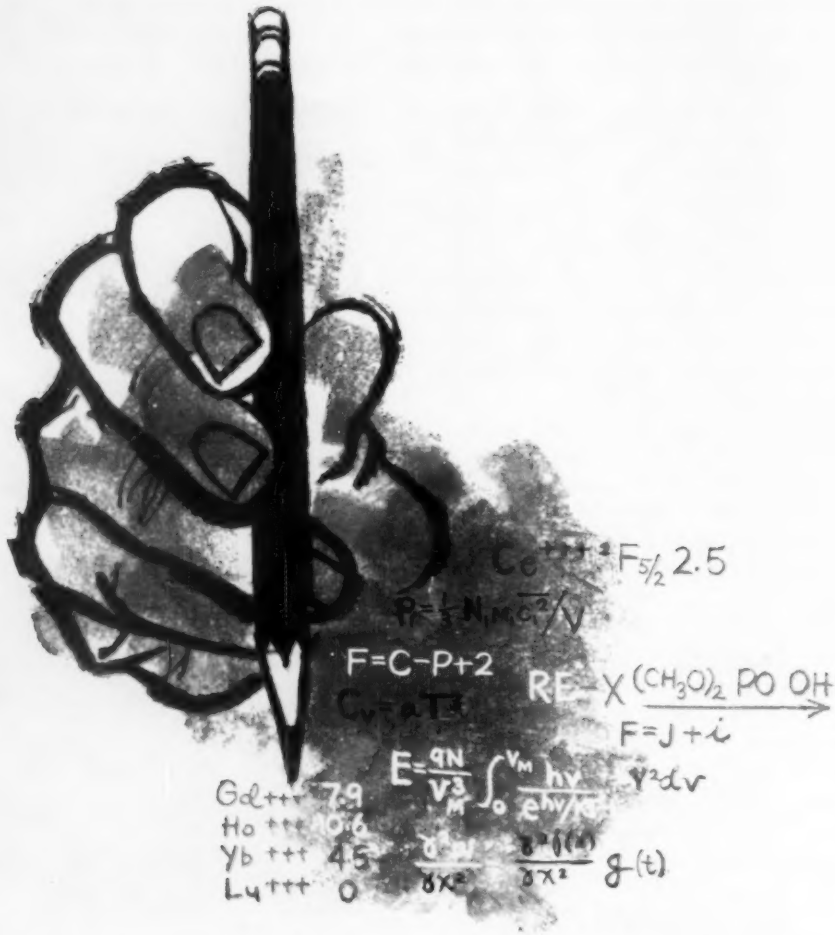


WHITE ALICE STATION perches among some of the roughest terrain in northwestern Alaska. Built by W.E. for the United States Air Force, the 33-station system provides Alaska with greatly improved military and civilian long distance communications.

SAGE PROJECTION SCREEN presents situation display to Sector Commander at Semi-Automatic Ground Environment direction center—allowing a potential enemy air attack to be quickly detected and missiles and fighter aircraft directed to selected targets.

BMEWS SUBMARINE CABLE is laid by HMS Monarch in the remote, ice-choked ocean north of the Arctic Circle. Western Electric was assigned the responsibility for development and construction of the rearward communications for the Ballistic Missile Early Warning System.

DEW LINE STATION on Baffin Island is part of the largest single defense system ever constructed—an operating radar system across the top of North America, having its own communications network.



NEW MATERIALS must be developed before man can reach into outer space. Ultimately these materials mean a better way of life for the modern consumer. Vitro has pioneered advances in rare earth chemicals and alloys. A thorium-magnesium master alloy, now in production, imparts ultra-high temperature resistance to missile skins and critical parts. Other rare earth developments mean improved electronic components and even top-quality eyeglass lenses. Another reason why Vitro means more than atomic energy... **chemical and metallurgical development.**

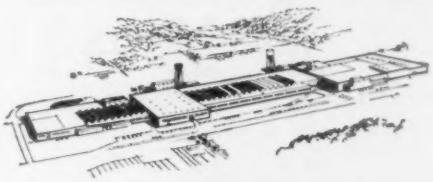
Vitro CORPORATION OF AMERICA
261 MADISON AVENUE, NEW YORK 16, N.Y.

Elmer Reid, master weaver, has a son, a daughter and four sons-in-law as fellow Lees employees.

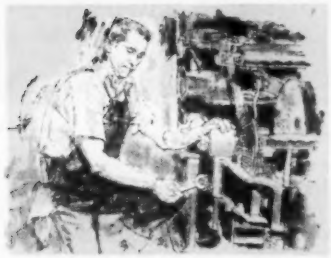
planning a new plant?

look beyond the plant site!

look to the people....



JAMES LEES & SONS COMPANY did just that before putting their carpet plant in Glasgow, Va. This nationally known maker of fine quality carpets found people of the four-county area to be "intelligent, hard-working, honest, independent in thought, highly skilled, receptive to new ideas." Today, Lees Glasgow plant covers 27 acres under one roof, employs 2,400 people — 3 times the population of Glasgow — drawn from a 30-mile radius.



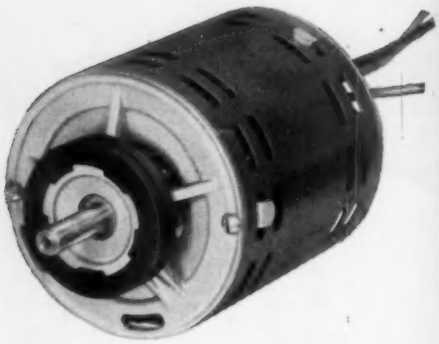
Civic-minded Lloyd Barger, with Lees nearly 20 years, was a leader in successful restudy of county taxes. Spare-time dairy farmer, excellent attendance record at Lees, adaptable to new work methods. Like 80% of Lees employees, he owns his home. Turnover at Lees is less than one-half of 1%. Absenteeism is well below the national average.

Lees Personnel Manager Robert Carson enjoys outdoor life and cultural advantages of the Land of Plenty. So does his family. Drives 20 pleasant, uncrowded minutes from his home at historic Lexington, without fighting heavy traffic. Carson is proud of the plant's 25-year record of labor-management harmony.

MANY FINE PLANT SITES, with advantages like those Lees enjoys, are ready for your company along the lines of today's fast-moving, progressive new Norfolk and Western Railway. For information, write, wire or telephone H. P. Cotton, Assistant Vice President.

Norfolk and Western Railway

GENERAL OFFICES, ROANOKE, VIRGINIA



this R & M motor puts the "Drive" in IBM electric typewriters!

Almost twelve years have elapsed since International Business Machines Corporation used its first R&M motor to power its electric typewriters. Since then R&M has supplied thousands upon thousands of these special motors for IBM's world-wide typewriter trade. In order to meet varying electrical conditions the world over, they are now supplied in 21 different voltages and frequencies.

IBM proposed strict requirements for powering their machine. The motor must have high starting torque for quick response . . . run very quietly . . . cooler than normal . . . fit a limited space . . . and have stamina to perform dependably year after year. Within a short period of time, R&M delivered specifications for the right design—a dynamically balanced motor that fulfilled all of IBM's standards, including reliable operation that covers thousands of hours between check-ups.

A lot of fingers have gone over the keys since R&M produced its first IBM typewriter motor, but we still subject each IBM power unit to 100% inspection. Moreover, we constantly work with IBM—and all our customers—to improve our motors and to adapt them to the ever-changing requirements of customers' products.

R&M's experience in custom-designing motors for hundreds of products, and our facilities to produce a design at low cost, are at your service. Perhaps your problem can be met with a standard *"off-the-shelf"* power unit. If so, we'll tell you . . . and recommend the right R&M motor for the job. For power by either custom or standard fractional HP motors . . . and performance that will give you a big competitive advantage . . . get in touch with Robbins & Myers today! Write for Bulletin No. 450BZ.

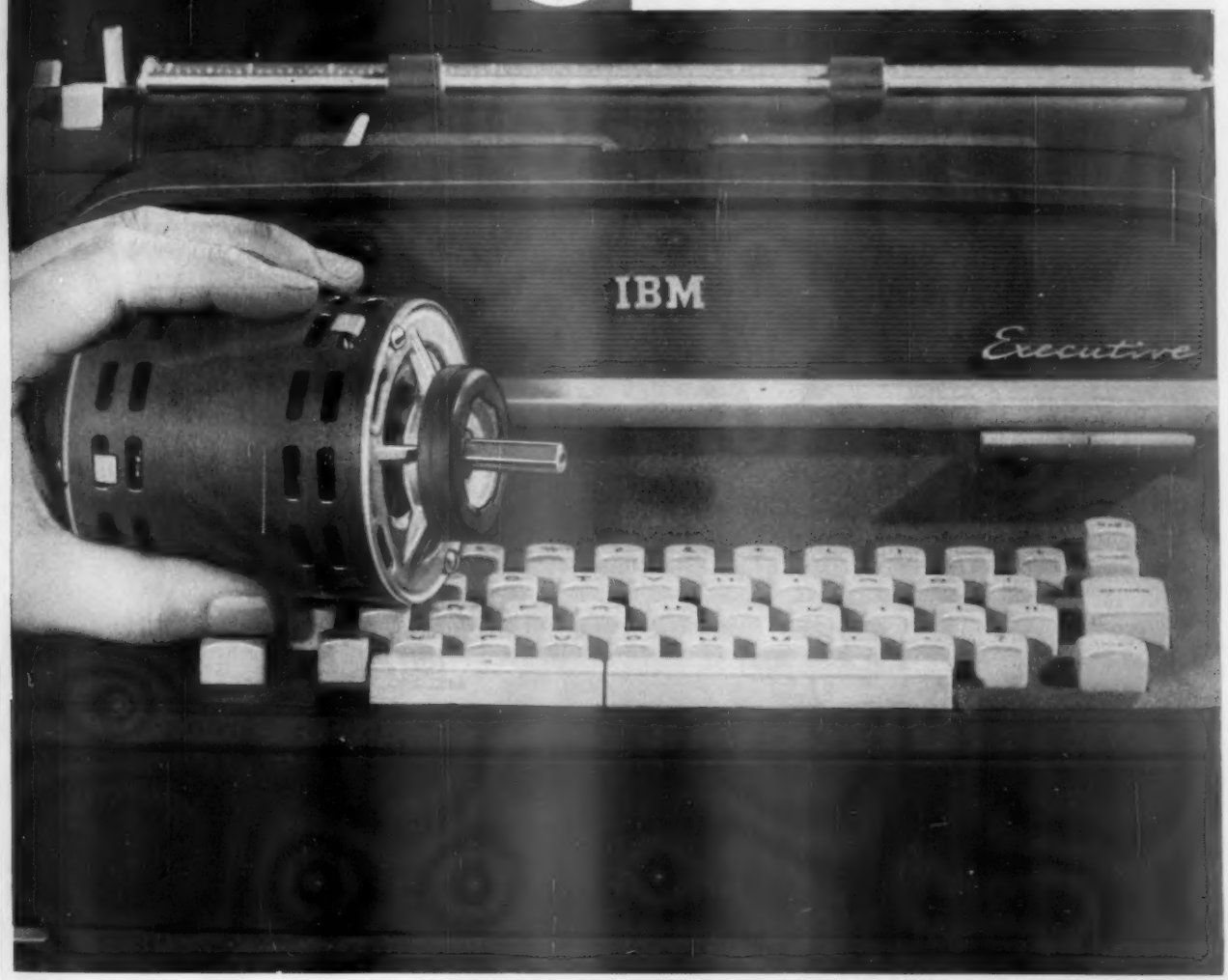
ROBBINS & MYERS, INC.

motors, household fans, Propellair industrial fans, hoists, Moyno industrial pumps

SPRINGFIELD, OHIO • BRANTFORD, ONTARIO

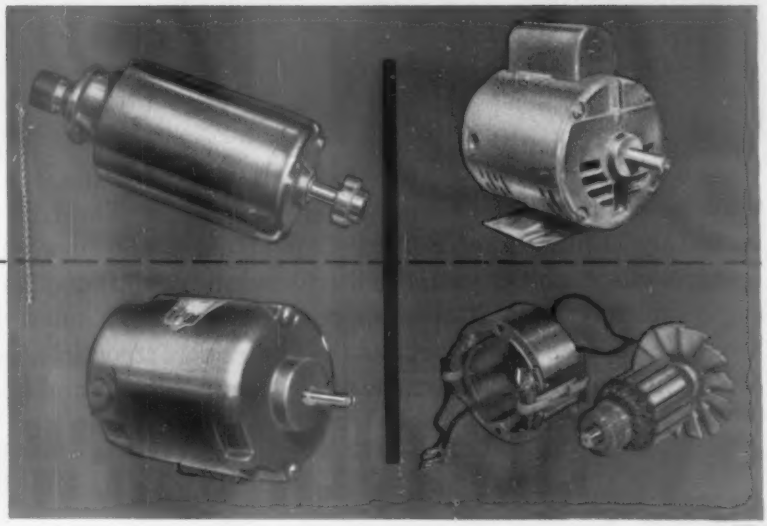
MOTORS 1/200 thru 1 HP

(other ratings up to 200 horsepower)



At left, Retractable Capstan Motor . . . shaft of this special R&M fractional HP motor rotates and also moves axially. Manufactured for IBM's 727 Magnetic Tape Unit.

At right, Standard Fractional HP Motors . . . a wide range of types, sizes and mountings for DC, single or polyphase AC; all standard voltages and frequencies.



At left, Standard Universal Motors . . . ratings from 1/50 to 1/2 HP. Choice of end, pad or foot mountings to permit design versatility. Custom designs also available.

At right, Series Motor Parts . . . precision-made series, universal or polyphase high-cycle motor parts. All types and sizes engineered to your requirements.

ONLY ONE CUP SOLVES

ends dishwashing

ends breakage

speeds service

saves bussing

Now a revolutionary way to serve hot drinks ends the headaches of ordinary coffee service. New Lily* China-Cote* Service Cups! This amazing disposable cup eliminates dishwashing completely, while it saves space . . . saves money . . . speeds service . . . has the look and feel of fine china . . . and because of its plastic coating, it's the paper cup you never taste!

The Lily China-Cote Cup is a superior plastic-coated 7-oz. cup with reinforced rounded bottom for perfect stirring. Its companion plastic holder is practically indestructible, scratch-resistant, comfortable to hold, and never touches the lips.

LILY-TULIP'S NEW CHINA-COTE

ALL YOUR PROBLEMS

no paper taste

always sanitary

saves money

Lily China-Cote Service Cup is another example of Lily's continuing creative approach to cup and container research and development. For further information, just call us, or fill in this coupon.

SERVICE CUP

Lily-Tulip Cup Corporation. Dept. BW660, 122 East 42nd Street, New York 17, N. Y.

Please send me informative literature on Lily China-Cote Service Cups.

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*T. M. REG. U. S. PAT. OFF.

DOW

INDUSTRY'S CHEMICALS

what's making news?

Much of the marketing action of Dow's industry-oriented teams can be neatly defined as concerned with the research and development of chemicals for specific industries, such as the petroleum industry, the automotive industry, the pharmaceutical industry. But some markets are mavericks, defying limitation, with problems common to virtually all industry. The industrial cleaning market is one of these. Here, the development of a new product, or the application of an old product to a new use pays off across the board, for all industries.

SOLVENT RESEARCH HELPS SOLVE A SAFETY RIDDLE

Strange as it may sound, "cleanliness" can be a two-edged sword. Take the case of conventional solvents for industrial cleaning. For the production man, these materials do an excellent job of cleaning, but their toxicity or fire hazard (or sometimes both) is high on the list of riddles for the safety man.

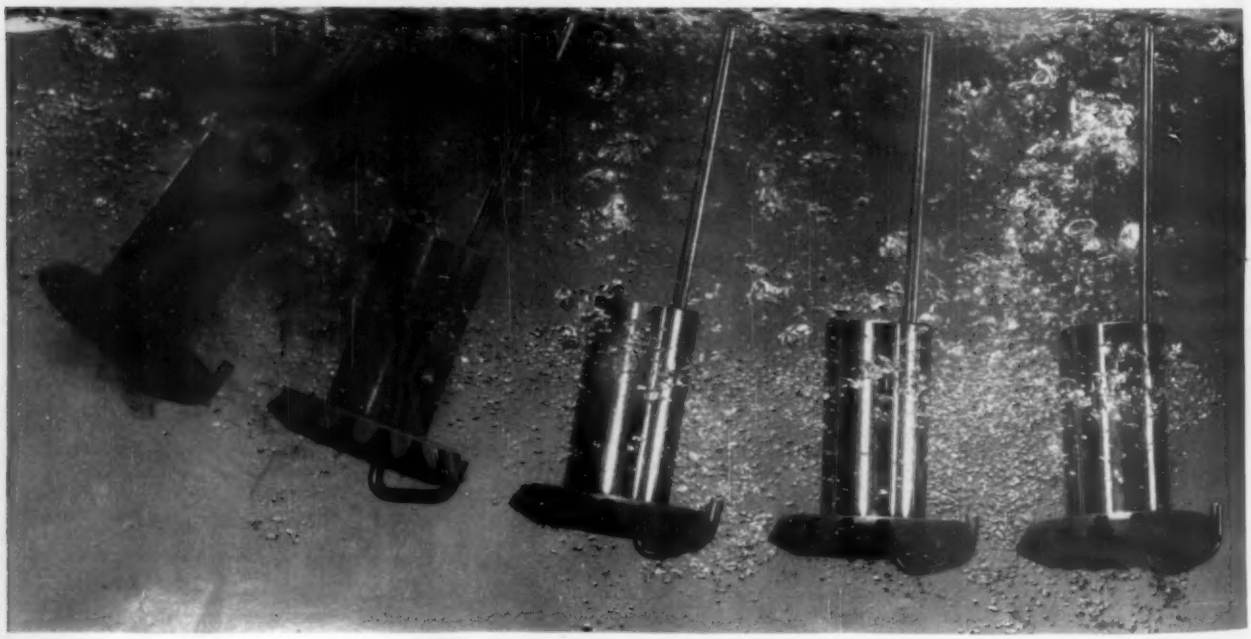
The solvent development program at Dow is directed toward solving the safety riddle while maximizing solvent efficiency. For example, here's what Chlorothene® NU—the latest Dow development in cold cleaning solvents—can do for you.

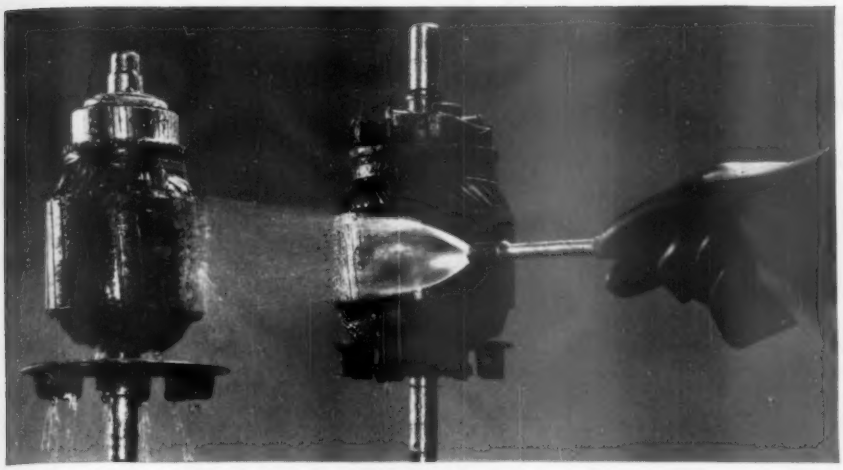
Industrial cleaning solvents grew up with mass production. But in the process of growing up, they put industry squarely between the horns of a dilemma. Production standards require a cold cleaning solvent to be non-corrosive, economical, powerful enough to remove greases, oils, waxes, and other soils quickly, and to dry fast without leaving a residue. And safety demands that it have a low vapor toxicity rating and low flammability.

VERSATILE CHLOROTHENE NU

Dow's newest cold cleaning solvent —Chlorothene NU (specially inhibited 1,1,1-trichloroethane) takes dead aim

A unique combination of safety and solvent power makes Chlorothene NU the ideal cold cleaner for production lines.





The fire safety of Chlorothene NU permits maintenance spraying without costly protection systems.

at this very objective. In wipe, dip, spray, or slush cleaning applications, Chlorothene NU meets all the specific safety and production requirements of a cold solvent cleaner. Its high-power solvency quickly and thoroughly removes soils. It evaporates fast with no residue remaining. The special inhibitors in Chlorothene NU make it more stable; virtually non-corrosive to metals, including aluminum and zinc; easier and more economical to recover and re-use. Chlorothene NU has no flash or fire point by standard testing methods. And just as important, it has a vapor toxicity rating unmatched by most other common chlorinated solvents.

SAFETY PLUS VERSATILITY

Today, this versatile performer is cleaning everything from small tools to huge missile components, from simple electric circuits to complex electronic brains, often several times from the beginning to the end of production.

But where versatility in a *wide* range of applications is an advantage of Chlorothene NU, Dow also markets a variety of solvents with specific advantages for *specific* applications. Take the four members of the Dow family of trichloroethylene, for example: NEU-TRI®, neutral trichloroethylene; ALK-TRI®, alkaline trichloroethylene; HI-TRI®, high-purity trichloroethylene; and EX-TRI®, extraction-type trichloroethylene.

CLEANING MISSILE HARDWARE

HI-TRI solvent is a specially designed cold flushing agent. Its superior cleaning action, freedom from residue, no flash or fire point by all standard testing methods, and shock sensitivity, qualify it for the all-important job of cleaning missile hardware. ALK-TRI, the amine stabilized degreasing solvent, can be easily analyzed to maintain an exact solvent-stabilizer balance. NEU-TRI was designed for fast, efficient vapor degreasing. Its built-in neutral stabilizing system prevents chemical breakdown under heavy work load conditions. EX-TRI is designed for use in certain special extraction processes.

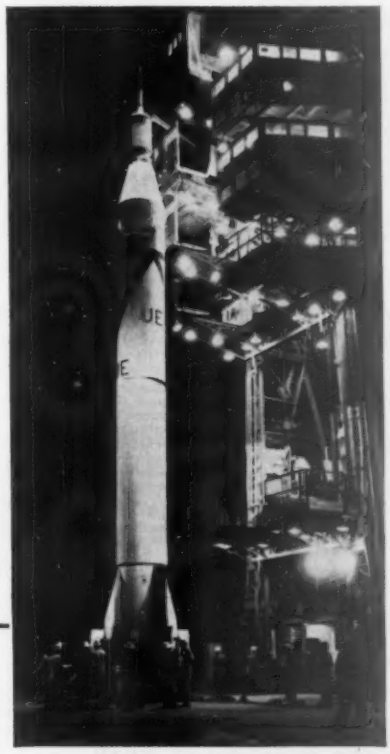
Another highly stabilized Dow solvent, perchloroethylene industrial, has a high boiling point (250°F.) which permits longer cleaning action, complete and thorough drying of the work, and greater economy, too.

Nonflammable, low toxicity Dow methylene chloride forms the base for many solvent paint strippers. These formulations cut through even the toughest paint and protective coatings, and lift them away from metal or wood surfaces in a matter of minutes.

Dow solvents are shipped in color coded drums to facilitate identification and handling.

STRONG-ARM CLEANING AIDS

No discussion of Dow's role in industrial cleaning would be complete without mentioning a pair of chemical workhorses that have distinguished themselves as ingredients in scores of cleaning compounds. Caustic soda is found in almost all heavy-duty cleaning compounds, and sodium orthosilicate contributes high detergent qualities, corrosion inhibition, and excellent rinseability to many cleaning operations. Dow is a basic source for caustic soda and sodium orthosilicate for many of the nation's leading industrial cleaning specialists.



To avoid premature fuel ignition from residues, HI-TRI is specified in many cases for cleaning missile hardware.

YOU'LL FIND a complete discussion of the applications and properties of Chlorothene NU in a new brochure. Write for your copy. And if you wish a summary of the other Dow Solvents, ask us to include the folder METAL CLEANING SOLVENTS. Call your nearest Dow distributor (see list on next page) or write: THE DOW CHEMICAL COMPANY, Midland, Michigan, Merchandising Department 303AF6-4.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN DOW

FOR HELPFUL METAL CLEANING INFORMATION

get in touch with your Dow Solvents Distributor

LETTER KEYS: (C)—Chlorothene® NU; **(M)**—Methylene Chloride; **(P)**—Perchloroethylene (Industrial); **(T)**—Trichloroethylene

ALABAMA
BIRMINGHAM—Wittichen Chemical Company **(C M P)**
BIRMINGHAM—F. H. Ross & Company, Inc. **(C M P)**
MOBILE—McKesson & Robbins, Inc. **(C M P T)**
MOBILE—F. H. Ross & Company, Inc. **(C M)**
MONTGOMERY—Wittichen Chemical Company **(C M P)**

ARIZONA
PHOENIX—Braun Chemical Company **(C M P T)**
PHOENIX—Western Chemical Company **(C M P)**
TUCSON—Western Chemical Company **(C M P)**

CALIFORNIA
LOS ANGELES—Braun Chemical Company **(C M P T)**
LOS ANGELES—McKesson, Mefford Chemical Division **(P)**
LOS ANGELES—Pomaco, Inc. **(P T)**
SAN DIEGO—Braun Chemical Company **(C M P T)**
SAN FRANCISCO—Braun-Knecht-Heimann Co. **(C M P T)**
SAN FRANCISCO—G. N. Meacham Company **(C)**

COLORADO
DENVER—Braun-Knecht-Heimann Company **(C M)**
DENVER—Chemical Sales Company **(C M P T)**
DENVER—McKesson & Robbins, Inc. **(C M P T)**
DENVER—Mine and Smelter Supply Company **(C M P T)**
GRAND JUNCTION—C. D. Smith Co., Chemical Div. **(C P T)**

CONNECTICUT
HARTFORD—Dwight R. Judson Company **(C T)**
NEW HAVEN—H. Kravit and Company, Inc. **(C P T)**
SHELTON—Axton-Cross Company **(C M P T)**
SOUTH NORWALK—Guard-All Chemical Co. **(C M P T)**
STAMFORD—McKesson & Robbins, Inc. **(C M P)**
WATERBURY—Hubbard Hall Chemical Company **(M)**

FLORIDA
JACKSONVILLE—F. H. Ross & Company, Inc. **(C M P)**
JACKSONVILLE—Amica Burnett Chemical Co. **(C M P T)**
MIAMI—Amica Burnett Chemical Co. **(C M P T)**
MIAMI—Biscayne Chemical Laboratories **(C M P)**
ORLANDO—Atlantic Chemicals, Inc. **(C M P T)**
TAMPA—Amica Burnett Chemical Co. **(C M P T)**
TAMPA—Atlantic Chemicals, Inc. **(C M P T)**
TAMPA—McKesson & Robbins, Inc. **(C M P T)**

GEORGIA
ATLANTA—Chapman Chemical Company **(T)**
ATLANTA—McKesson & Robbins, Inc. **(C M P T)**
ATLANTA—F. H. Ross & Company, Inc. **(C M P)**
ATLANTA—Southern States Chemical Co. **(C M P T)**
BIRMINGHAM—Chapman Chemical Company **(T)**
COLUMBUS—F. H. Ross & Company, Inc. **(C M P)**
DUBLIN—Textile Aniline Chemical Company **(T)**

IDAHO
BOISE—Van Waters & Rogers, Inc. **(C M P)**

ILLINOIS
AURORA—River Valley Chemicals, Inc. **(C M P T)**
CHICAGO—Central Solvents & Chemicals Co. **(C M P)**
CHICAGO—C. P. Hall Company of Illinois **(C M P T)**
CHICAGO—McKesson & Robbins, Inc. **(C M P T)**
CHICAGO—Joseph Turner & Company **(C M P T)**
DECATUR—McKesson & Robbins, Inc. **(C M P T)**
EFFINGHAM—Wabash Independent Oil Company **(C P T)**
MELROSE PARK—London Chemical Company, Inc. **(P T)**
PEORIA—McKesson & Robbins, Inc. **(C M P T)**
ROCKFORD—Industrial Oil & Chemical Company **(C)**
ROCKFORD—Viking Chemical Company **(C M P T)**

INDIANA
EVANSVILLE—Barning Industrial Chemicals, Inc. **(C M P T)**
EVANSVILLE—Charles Leich and Company **(P)**
FT. WAYNE—Hoosier Solvents & Chemicals Corp. **(C M P)**
FT. WAYNE—Inland Chemical Corporation **(C M P)**
HAMMOND—Inland Chemical Corporation **(C M P T)**
INDIANAPOLIS—Hoosier Solvents & Chemicals Corp. **(C M P)**
INDIANAPOLIS—Wm. Lynn Chemical Co., Inc. **(C M P)**
INDIANAPOLIS—Ulrich Chemical Company, Inc. **(C T)**
KOKOMO—Plating Products, Inc. **(T)**
LOGANSPORT—Plating Products, Inc. **(T)**
SOUTH BEND—Inland Chemical Corporation **(C M P T)**
SOUTH BEND—Stevens Company **(C M P)**

IOWA
BETTENDORF—Barton Naphtha Corporation **(C M P)**
BURLINGTON—McKesson & Robbins, Inc. **(C M P T)**
CEDAR RAPIDS—McKesson & Robbins, Inc. **(C M P T)**
COUNCIL BLUFFS—Barton Solvents Co. **(C M P T)**
DAVENPORT—McKesson & Robbins, Inc. **(C M P T)**
DES MOINES—Barton Naphtha Company **(C M P T)**
SUMNER—Overton Chemical Sales **(C)**

KANSAS
WICHITA—McKesson & Robbins, Inc. **(C M)**

KENTUCKY
LOUISVILLE—Dixie Solvents and Chemicals Co. **(C M P)**
LOUISVILLE—Gans Chemical and Supply Company **(P)**
LOUISVILLE—McKesson & Robbins, Inc. **(C M P T)**

LOUISIANA
BATON ROUGE—McKesson & Robbins, Inc. **(C)**
NEW ORLEANS—McKesson & Robbins, Inc. **(C)**
NEW ORLEANS—Southern Solvents and Chemicals **(C M P T)**

MAINE
LEWISTON—Polar Chemical Company **(C M P T)**

MARYLAND
BALTIMORE—Leidy Chemicals Corporation **(C M P)**
BALTIMORE—Sailer-Hughes Chemicals, Inc. **(C)**
BALTIMORE—Tilley Chemical Company **(T)**

MASSACHUSETTS
BOSTON—Howe and French, Inc. **(C M)**
BOSTON—Linder and Company, Inc. **(C M P T)**
BOSTON—McKesson & Robbins, Inc. **(C M P T)**
EVERETT—Sessions-Gifford Co., Inc. **(C M P T)**
FRAMINGHAM—Axton-Cross Corp. of Mass. **(C P T)**
HINGHAM—Stephen-Roger, Inc. **(C M P T)**
SPRINGFIELD—Chemical Corporation **(C M P T)**
SPRINGFIELD—Hampden Color & Chem. Co. **(C M P)**
STONEHAM—George Mann & Company, Inc. **(C M P T)**
WESTFIELD—Eastern Chemicals, Inc. **(M)**
WORCESTER—George H. Clark and Co. **(C M P T)**

MICHIGAN
DETROIT—Eaton Chemical & Dyestuff Company **(C M)**
DETROIT—Manpro Corporation **(C M P T)**
DETROIT—McKesson & Robbins, Inc. **(C M P T)**
DETROIT—Western Solvents & Chemicals Company **(C M P)**
DETROIT—Whitfield Chemical Company **(P)**
ESCANABA—Haviland Products Company **(C M P)**
FERNDALE—Manpro Corporation **(C M P T)**
GRAND RAPIDS—Haviland Products Company **(C M P)**
GRAND RAPIDS—McKesson & Robbins, Inc. **(C M P T)**
GRAND RAPIDS—Wolverine Solvents & Chemicals Co. **(C M P)**
LANSING—Carrier Stephens Company **(C M P)**
LANSING—Wheaton Chemical Company **(C P)**
SAGINAW—McKesson & Robbins, Inc. **(C M P T)**

MINNESOTA
MINNEAPOLIS—W. H. Barber Company **(P T)**
MINNEAPOLIS—McKesson & Robbins, Inc. **(C M P T)**
ST. PAUL—Lyons Chemicals, Inc. **(C M P)**

MISSISSIPPI
JACKSON—F. H. Ross & Company, Inc. **(C M P)**

MISSOURI
KANSAS CITY—McKesson & Robbins, Inc. **(C M)**
KANSAS CITY—Missouri Solvents and Chemicals Co. **(C M P)**
KANSAS CITY—Sherwood and Company, Inc. **(C M P T)**
ST. LOUIS—McKesson & Robbins, Inc. **(C M P T)**
ST. LOUIS—Independent Oil Company **(C M P T)**
ST. LOUIS—G. S. Robins and Company **(C M P)**
ST. LOUIS—Missouri Solvents and Chemicals Co. **(C M P)**

NEBRASKA
OMAHA—Barton Solvents Company **(C M P T)**
OMAHA—McKesson & Robbins, Inc. **(C M P T)**

NEW JERSEY
BLOOMFIELD—McKesson & Robbins, Inc. **(C M P)**
CAMDEN—Callahan Chemical Company **(C M P T)**
EAST PATERSON—Aetna Chemical Corp. **(C M P T)**
MURRAY HILL—American Mineral Spirits Co. **(C M P T)**
NEWARK—American Oil and Supply Co. **(C P)**
NEWARK—National Oil and Supply Company **(C M P T)**
PALISADES PARK—Philip A. Hunt Company **(C)**
PERTH AMBOY—Modern Solvents & Chemicals Corp. **(M P T)**
RIVERDALE—A. H. Mathieu Company **(P)**
SOUTH KEARNY—American Chemicals, Inc. **(C M P T)**
VINELAND—Lirio Chemical Company **(C P T)**

NEW MEXICO
ALBUQUERQUE—Braun Chemical Company **(C M P T)**
ALBUQUERQUE—Edmunds Chemical Company **(C M P T)**

NEW YORK
ALBANY—Krackler & Campbell, Inc. **(M)**
ATHENS—Spick Products Company **(P T)**
BINGHAMTON—Collier Chemicals, Inc. **(P T)**
BRONX—Elco Solvents Corporation **(M P T)**
BROOKLYN—Enequist Chemical Company **(C P)**
BUFFALO—Buffalo Solvents and Chemicals **(C M P)**
BUFFALO—Chemical Sales Corporation **(C M P T)**
BUFFALO—McKesson & Robbins, Inc. **(C M P T)**
GARDEN CITY—Hagan Industrial Supply Corp. **(C M P T)**
GLOVERSVILLE—Eastern Chemicals, Inc., S. H. Ireland Div. **(C M)**
KEARNY—American Chemicals, Inc. **(C M P T)**
LONG ISLAND CITY—Peerless Oil and Chemical Corp. **(C M P T)**
NEW YORK—American Chemicals, Inc. **(C M P T)**
NEW YORK—McKesson & Robbins, Inc. **(C M P)**
POUGHKEEPSIE—Duso Chemical Company **(C)**
RENSSELAER—Eastern Chemicals, Inc. **(C M)**
ROCHESTER—Chemical Sales Corporation **(C M P T)**
SYRACUSE—Eastern Chemicals, Inc. **(C M)**
UTICA—Monarch Laboratories **(C M P)**

NORTH CAROLINA
CHARLOTTE—F. H. Ross & Company, Inc. **(C M)**
CHARLOTTE—Moreland Chemical Company **(C M P T)**
CHARLOTTE—Southern States Chemical Co. **(C M P T)**
GREENSBORO—F. H. Ross & Company, Inc. **(C M)**

OHIO
AKRON—Farley Solvents Company **(C M P T)**
AKRON—C. P. Hall Company **(C M P T)**
CANTON—Bison Corporation **(C M P)**
CINCINNATI—Amsco Solvents and Chemicals Co. **(C M P)**
CINCINNATI—Chipman Supply Company **(T)**
CINCINNATI—Herbert Chemical Company **(P T)**
CINCINNATI—McKesson & Robbins, Inc. **(C M P T)**
CLEVELAND—Man-Gill Chemical Company **(C P T)**
CLEVELAND—McKesson & Robbins, Inc. **(C M P T)**
CLEVELAND—National Solvents Corporation **(C P T)**
CLEVELAND—Ohio Solvents and Chemicals, Inc. **(C M P)**
CLEVELAND—R. W. Renton Company **(C P T)**
COLUMBUS—McKesson & Robbins, Inc. **(C M P T)**
DAYTON—Industrial Chemical Products Co. **(C P T)**
DAYTON—Ottoson Solvents, Inc. **(T)**
LIMA—Thomson Chemical Company **(C M P T)**
TOLEDO—Inland Chemical Co. **(C M P)**
TOLEDO—Toledo Solvents and Chemicals **(C M P)**
TOLEDO—M. I. Wilcox Company **(C P T)**
YOUNGSTOWN—Rhiel Supply Company **(C M P T)**

OKLAHOMA
OKLAHOMA CITY—McKesson & Robbins, Inc. **(C M P T)**
TULSA—McKesson & Robbins, Inc. **(C M P T)**
TULSA—Chemical Products, Inc. **(C M P T)**

OREGON
PORTLAND—Van Waters & Rogers, Inc. **(C M P)**

PENNSYLVANIA
CONSHOHOCKEN—American Mineral Spirits Co. **(C M P T)**
EASTON—Lehigh Valley Chemical Company **(C M P T)**
ERIE—Monarch Laboratories **(T)**
LEESPORT—R. W. Eaken, Inc. **(C M P T)**
McKEES ROCKS—Apex Soap and Sanitary Corp. **(C P T)**
PHILADELPHIA—Alex C. Fergusson Company **(C P T)**
PHILADELPHIA—McKesson & Robbins, Inc. **(C M P T)**
PHILADELPHIA—Phillips and Jacobs, Inc. **(C M)**
PHILADELPHIA—Pioneer Salt Company **(C M P T)**
PHILADELPHIA—George Senn, Inc. **(C M P T)**
PITTSBURGH—Carmac Chemical Company, Inc. **(C P)**
PITTSBURGH—Carman-Pittsburgh Company, Inc. **(C)**
PITTSBURGH—Ft. Pitt Chemical Company **(C)**
PITTSBURGH—McKesson & Robbins, Inc. **(C M P T)**
READING—Textile Chemical Company **(C P)**
SCRANTON—Scranton Chemical Company **(C P T)**
YORK—Industrial Solvents and Chemicals Co. **(C P T)**

RHODE ISLAND
CRANSTON—Giffordline Chemical Company **(C M P T)**
PROVIDENCE—George Mann & Company, Inc. **(C M P T)**
PROVIDENCE—Sessions-Gifford Company, Inc. **(C M P T)**

SOUTH CAROLINA
CHARLESTON—Burris Chemical Company **(C P T)**
GREENVILLE—F. H. Ross & Company, Inc. **(C M)**
GREENVILLE—Southern States Chemical Co. **(C M P T)**
SPARTANBURG—Moreland Chemical Co., Inc. **(C M P T)**

TENNESSEE
CHATTANOOGA—Chapman Chemical Co. **(C M P T)**
CHATTANOOGA—Wilson Sales Company **(C M P T)**
KINGSPORT—Chem-I-Dent, Inc. **(C P T)**
MEMPHIS—Chapman Chemical Company **(C M P T)**
MEMPHIS—C. P. Hall Company **(C M P T)**
MEMPHIS—Ideal Chemical and Supply Co. **(C M P T)**
NASHVILLE—Chapman Chemical Company **(C M P T)**
NASHVILLE—Wilson Sales Company **(C M P T)**

TEXAS
AMARILLO—State Chemical Company **(C M P T)**
AUSTIN—R. M. Hughes Company, Inc. **(C M P T)**
BEAUMONT—Arthur Dooley and Son **(C M P T)**
CORPUS CHRISTI—McKesson & Robbins, Inc. **(C M P T)**
DALLAS—McKesson & Robbins, Inc. **(C M P T)**
DALLAS—Texas Solvents and Chemicals Co. **(C)**
DALLAS—Van Waters and Rogers, Inc. **(C M P T)**
EL PASO—Baron Chemical Company **(C M P T)**
EL PASO—Braun Chemical Company **(C M P T)**
EL PASO—Mine and Smelter Supply Company **(P)**
FORT WORTH—McKesson & Robbins, Inc. **(C M P T)**
HOUSTON—McKesson & Robbins, Inc. **(C M P T)**
HOUSTON—W. H. Curtin and Company **(P)**
HOUSTON—Dixie Chemical Company **(C M P T)**
HOUSTON—R. M. Hughes Company, Inc. **(C M P T)**
HOUSTON—Texas Solvents and Chemicals Co. **(C M P)**
HOUSTON—Van Waters and Rogers, Inc. **(C M P T)**
LUBBOCK—State Chemical Company **(C M P T)**
MIDLAND—State Chemical Company **(C M P T)**
ODESSA—McKesson & Robbins, Inc. **(C M P T)**
SAN ANTONIO—R. M. Hughes Company, Inc. **(C M P T)**
SAN ANTONIO—McKesson & Robbins, Inc. **(C M P T)**
TERMINAL—State Chemical Company **(C M P T)**

UTAH
SALT LAKE CITY—Braun-Knecht-Heimann Co. **(C M P T)**

VIRGINIA
RICHMOND—Phipps and Bird, Inc. **(C M P T)**
ROANOKE—Havnaer Supply Company **(C M P T)**

WASHINGTON
SEATTLE—Van Waters & Rogers, Inc. **(C M P)**
SPOKANE—Van Waters & Rogers, Inc. **(C M P)**

WEST VIRGINIA
BLUEFIELD—Fairmont Supply Co. **(T)**
CHARLESTON—B. Preiser Company, Inc. **(C M P T)**
FAIRMONT—Fairmont Supply Company **(C P T)**
HUNTINGTON—Cabell Chemical Company **(C P T)**

WISCONSIN
APPLETON—McKesson & Robbins, Inc. **(C M P T)**
CHIPPEWA FALLS—Lyon Chemicals Co., Inc. **(C M P)**
LA CROSSE—North Central Chemicals, Inc. **(C M P T)**
LA CROSSE—Wisconsin Solvents & Chemicals Corp. **(C M P)**
MADISON—North Central Chemicals, Inc. **(C M P T)**
MILWAUKEE—Benlo Industrial Chemicals Company **(P T)**
MILWAUKEE—McKesson & Robbins, Inc. **(C M P T)**
MILWAUKEE—Wisconsin Solvents & Chemicals Corp. **(C M P)**
WAUKESHA—F. P. Jay Chemicals, Inc. **(C M T)**

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BUSINESS OUTLOOK

BUSINESS WEEK
JUNE 4, 1960

Construction will be pushing higher throughout this year and, by the present look of things, well into 1961.

And **housing will be making its contribution.** Perhaps the upturn is slow in catching on in the case of custom-built and small-project units, but **there is an upsurge developing in mass housing.**

Awards of heavy **construction contracts** compiled by McGraw-Hill's Engineering News-Record have been running at a very high level, on average, for the last six weeks. While these figures do not include single homes or small projects, they catch all the big ones.

Last week saw another near record, above $600-million in contracts. Contributing importantly were two more mass housing projects.

Official figures on the **actual work done on construction sites** don't yet reflect the vigorous upswing in new contract awards.

There is evidence, however, that **the fall-and-winter dip has ended.**

On a seasonally adjusted annual basis, the dollar value of work put in place has been about unchanged for three straight months. The Commerce Dept., estimates the May rate at $53.3-billion, the same as April. That's about $3-billion under the annual rate at this time last year, but the gap can be closed quite readily before the year is out.

You now can begin setting **new benchmarks for homebuilding** (page 119).

The mystery of how our national inventory of dwelling units has risen much faster than the number of housing "starts" is being cleared up by the Census Bureau. Some were built outside areas requiring permits; others haven't qualified as homes by past definition.

On the new estimates, we've been averaging 1½-million new units a year since 1950 instead of the 1.2-million previously reported.

—•—

Consumers now are spending more on durable goods than ever before —and, even so, output of such goods has dipped from its earlier peak.

A good deal of the explanation may be found, of course, in turn-of-the-year optimism; this led to **over-stocking all the way from the factory warehouse right on out to the retail store.**

Present totals still leave durable goods with a none-too-fat portion of each dollar spent at retail.

When figures are in for this year's second quarter, it probably will be found that **just over 14¢ of each retail dollar went for hardgoods.**

That would be more than in 1958 and 1959, to be sure, and it about matches the 1957 level. However, **the present rate was exceeded** in 1956 and the 1955 rate of 15.4¢ per dollar makes it look downright shabby.

Here's another way to look at it: If today's spending were at even 15¢ on the dollar, hardgoods would reap an added $4½-billion a year. That would push the annual total to something like $49-billion.

The best full year up to now was 1959 with $43-billion while the current quarter, pushing $45-billion, will break all quarterly marks.

Factories manufacturing durable goods for consumers and for other industries have been shipping at a record rate so far this year.

But their high rate of activity has been sustained by their **backlogs** rather than by a robust flow of **new orders.** In fact, the dollar value of their shipments have topped new orders in each of the last six months.

The result of this has been a **reduction in the order backlog** of more than **$3-billion since last October.**

Manufacturers of all types of hardgoods had **unfilled orders** of **$45-billion** at the beginning of May, according to the Commerce Dept. This was equivalent to almost exactly **three months' operations** at recent rates of activity—**the skimpiest ratio reported in the last 10 years.**

You can read ominous meaning into the gap between incoming orders and the outflow of durable goods from factories if you are so minded.

A good many business analysts, in fact, keep a chart of the relationship of these two figures. Prior to the present instance, **each postwar occasion** of new orders falling below sales for more than a month or two has marked **the onset of a recession** in general activity.

Inventories held by manufacturers of durable goods seem to have just about **stopped rising.** And, compared to the value of goods they have been shipping, stocks would seem to be no more than adequate.

However, if the lag in new orders is forecasting a drop in shipments, then **inventories at present levels** could come to look very large indeed.

Here you have a lot of the symptoms of the familiar "inventory recession": large stocks to match high sales but new orders lagging.

Yet **very few people are taking fright.** They expect **consumer buying** and **business outlays** on plant equipment to put new life into the flow of orders booked by factories.

—•—

Another indication that **businessmen are going ahead with their plans for expansion and modernization** despite declining business since the turn of the year comes from the Federal Reserve Bank of Philadelphia.

In a survey in its own territory, the bank finds that **manufacturers have expanded their plans** rather than retrenching.

—•—

Machine tool builders can't help being a bit perplexed by the way in which the factory modernization program seems to be passing them by.

No month since the recession trough has brought them anything approaching a rush of new orders, and **some months have been just out-and-out disappointing.** April was such a month, with orders for cutting tools slipping fairly well below March and, for the first time this year, falling substantially below a year ago.

One source of disappointment is that the **auto companies are slow in ordering tools** required next summer to start the 1962 model run.

Contents copyrighted under the general copyright on the June 4, 1960, issue—Business Week, 330 W. 42nd St., New York, N. Y.

Now you can junk all those clutter-makers

This day–he becomes a more valuable man

New Clutter-Proof Desks organize work, save time and save floor space

It's remarkable how a clear desk top and orderly desk drawer interiors can give office people a fresh, new outlook on work. That's exactly what a Shaw-Walker "Clutter-Proof" Desk does.

The rewards are—better work, faster, easier. And *working space on the desk top is nearly doubled.*

How's it done? Fully 75% of the things that drift around on the tops of other desks have a specific place *inside* this desk. Even your letter trays, the telephone and wastebasket are in these space-planned drawers.

The *Clutter-Proof Desk* is *only one* of Shaw-Walker's time- and space-savers that will help *reduce your office costs.* Others are: Files with automatic expanding drawers; step-saving fireproof equipment; error-proof filing systems; time-saving payroll plans; ingenious automation accessories and many more.

Most companies experience measurable increases in efficiency when Shaw-Walker equipment is used. Thirty minutes to an hour more daily output at the modernized work stations is not unusual.

You will get some profitable ideas by visiting one of our 17 panoramic branches or 485 dealers. Alternately, ask for our 248-page colorful "*idea book*," the Office Guide. *Free* to office and purchasing executives when requested on business letterhead.

"Built Like a Skyscraper"

SHAW-WALKER

Largest Exclusive Makers of Office Equipment
Muskegon 64, Michigan

New steels are born at Armco

HOW MUCH "JUMP STRESS" WHEN A HOMER GOES OVER THE FENCE?

31,000 people can put a lot of "jump stress" on a stadium when the local favorite belts one out of the park. That's one important reason why the structural steel in Kansas City's new Municipal Stadium is held together by special high-strength bolts from Armco's **Sheffield Division.** Two more good reasons: it takes only about half as many men to tighten bolts as to set rivets – and the bolts hold 25% better.

THESE BLUE AND YELLOW "HORSE HEADS" NOD ALL OVER THE OIL COUNTRY

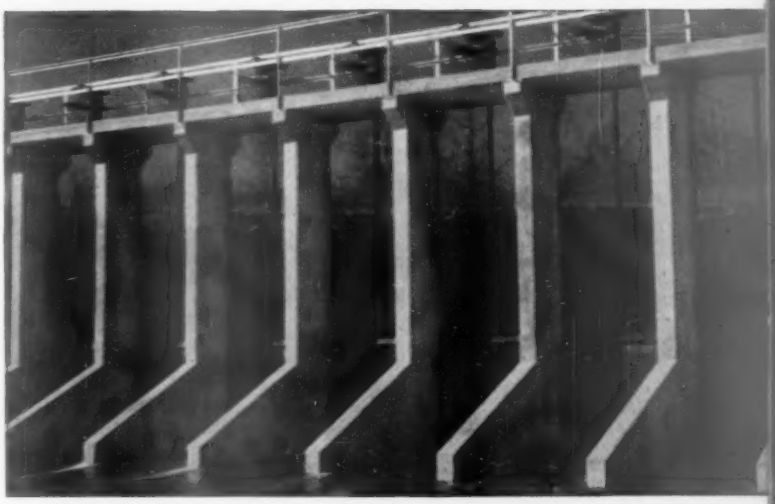
Shown here partly assembled, these pumping units pull oil from a well that no longer flows from natural pressure. Oilmen call them "horse heads," because they resemble a cantering horse when they're rhythmically pumping away. They bear the famous blue and yellow colors of Armco's subsidiary, **The National Supply Company** – world's largest manufacturer and distributor of oil field equipment.

Armco serves the free world with new steels and steel products

Steel

GATES AT DAM GIVE ANGLERS A BREAK

15 Armco Slide Gates in the Palarm Creek Dam, of Arkansas, back up water to make a fishing paradise. In flood, gates are opened—lower the lake six feet. These gates are one of over 30 construction products made by **Armco Drainage & Metal Products, Inc.**



HOW TO GET A THRILL—WITH SAFETY

An amusement park "airplane ride" where thousands trust their lives to wire rope. **Union Wire Rope Corporation,** an Armco subsidiary, is equipped to make 90,000 different kinds. Each of these types is as uniformly reliable as skill and science can make them.

THE COLOR ON THIS BATHTUB IS THERE TO STAY

Why? Its soft, coral tone is carried in a hard, glasslike porcelain enamel fused at 1550 F. to Armco Enameling Iron. This product of **Armco Division** is the standard of the world as a base metal for porcelain enameling.

ZINCGRIP "AIR DROP" IN FAR-OFF LAOS PROVINCE

This load of Armco ZINCGRIP® Steel was "dropped" from a plane in far-away Laos. Armco products are distributed by **The Armco International Corporation** through a network of offices and warehouses in 26 countries.

Shown here are only a few examples of how Armco's divisions and subsidiaries serve you with new steels and steel products. From its 43,500 men and women, in 94 plants around the world, comes a growing stream of advances in products and production techniques made possible by continuous research. Armco Steel Corporation, General Offices, Middletown, Ohio.

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Scuff and heat resistant—easy to use—just cut to size with scissors and apply. No tools or messy adhesives—goes around corners—stays in place.

Great for "disaster" areas, too, because the inside layer of Alcoa Foil disperses heat. Even a carelessly dropped cigarette or match (don't encourage that, of course) does no damage. Top vinyl film layer protects and prevents scuffing. Dirt, alcohol or food stains wipe off clean with a little soap and water. In 28 patterns!

Alcoa does not make wall or counter covers, but we'll be happy to put you in touch with the people who do. Alcoa sticks to being a prime producer of aluminum foil, the amazing material that forms, colors, twists, bends, combines with other materials, weaves into cloth, and does other surprising things almost beyond count. Have you considered Alcoa Foil in *your* product plans?

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ALCOA ALUMINUM

BUSINESS WEEK

JUNE 4, 1960

NUMBER 1605

Short-Run Relief, Long-Run Worry

That's the outlook for the free world as the impact of the summit collapse becomes clearer. Rocket threats, Red China are still perils.

Fear of an immediate cold war crisis is subsiding this week. At the same time, there is rising concern about East-West relations over the long run.

Since the summit's collapse, the Russians have eased Western anxiety somewhat by offering assurances on Berlin and Germany—while continuing scorching invective on U. S. policy in general.

The diplomatic climate is still poisoned with fear and suspicion. It will stay poisoned for some time. And this will affect the way foreign policy develops in both East and West.

• **Eventful Week**—Events this week brought more clearly into focus why the free world should feel short-term relief and longer-term concern. There were these reasons for feeling relief:

• Khrushchev, in a major speech last weekend, again ruled out any immediate new threat to Berlin. And, for the first time since the summit blowup, he gave Pres. Eisenhower credit for peaceful intentions.

• Evidence accumulated that Khrushchev's insulting behavior at the summit was more a reaction to U. S. handling of the U-2 spy plane incident than the sign of a tougher Soviet policy.

• The Geneva negotiations for a treaty banning military nuclear tests inched forward.

But there were also reasons for alarm, at least in the long-range view:

• Soviet Defense Minister Rodion Malinovsky announced that he has ordered rocket retaliation against take-off bases of any foreign plane that violates the air space of the Soviet or its allies.

• Khrushchev renewed his demand for Red Chinese participation in any future summit conference. This accentuated fear that his control may have weakened over his truculent Chinese ally.

Meantime, at the United Nations, the U-2 debate ended after torrents of propaganda and with nothing really settled. The Security Council voted

SECY. HERTER, facing a forest of TV and newsreel microphones, reads prepared statement he presented to Senate Foreign Relations Committee explaining the U-2 incident.

CHIEF CLERK Darrell St. Claire of Foreign Relations Committee gives reporters in corridor news of closed-door hearing inside.

COMMITTEE MEMBERS around horseshoe table prepare to hear testimony by witness Herter (second from left). The Secretary of State said Khrushchev apparently didn't decide to wreck the summit conference until after the U-2 was downed inside the Soviet Union.

down the Soviet resolution condemning U. S. "aggression," but Russia is expected to present it again to the General Assembly at the next regular session in September. Not even intended to resolve the dispute, the U-2 debate provided the Russians with the world's loftiest forum for their anti-U. S. propaganda.

I. A Milder Khrushchev

Khrushchev's speech went far to dispel fears that he was about to launch a new test of strength with the West. He expressed again his conviction—still not shared by many Stalinists—that a new war would cause untold suffering to all nations. He said Soviet leaders have been working—and will continue to work—to relax international tensions despite the breakdown of the summit. And he said he was in no hurry to take unilateral measures on West Berlin.

Returning part way to his pre-summit evaluation of Pres. Eisenhower, Khrushchev said: "I must say that I still believe that the President himself now, too, wants peace. But evidently the good intentions of the President are one thing and the foreign policy of the U. S. government is something else again. . . . Men who hamper the realization of peaceable intentions loom behind his back."

• **Reasons for Torpedoes**—Why then did Khrushchev pose impossible conditions for the summit conference?

This was Khrushchev's explanation: Eisenhower insisted on taking personal responsibility for the U-2 overflight, even though Khrushchev initially had offered him an out by declaring that he did not believe the President knew or approved of the flight. This was an intolerable challenge to the prestige and pride of the Soviet Union.

Khrushchev put the blame on the President's advisers: "They intended to lower Soviet prestige before other countries, including the Afro-Asian countries," he said. "What the Americans needed was taking down a peg or two. If the Soviets had sat down at the same table with them, this would have meant that the Soviets recognized their right to aggression. If the Soviets had bent their backs, the Americans would have saddled them."

II. Inquiring Senators

This speech by Khrushchev is one reason officials in Washington are coming to believe that the major element behind his behavior in Paris was simply the way the U. S. handled the U-2 affair.

Secy. of State Christian Herter all but conceded this in his testimony before Senate Foreign Relations Committee hearings on the summit collapse. He said there was no evidence that Khrushchev had planned to scuttle the summit before the U-2 was brought down. Some officials privately go further. They report that U. S. intelligence had strong evidence that, until the eve of the Paris meeting, Khrushchev intended to sign an interim agreement on Berlin.

This would suggest that there was no policy shift until after the U-2 incident—and that the U-2 was the direct cause of the change, not the pretext for implementing a shift already determined. Khrushchev's political position and prestige may have been weakened by recent events. But it doesn't look as if he were a captive of the Stalinists at the moment. If he were, he might not be postponing action on Berlin and continuing to negotiate seriously on a nuclear test ban.

• **Who's to Blame?**—All last week, the painful business of dissecting U. S. responsibility for the summit fiasco went forward in Washington. The Senate Foreign Relations Committee questioned officials about events leading up to the diplomatic tragedy. Besides Secy. Herter, witnesses included Under Secy. of State C. Douglas Dillon and Central Intelligence Agency chief Allen Dulles.

To limit political repercussions as well as for security reasons, testimony was taken behind closed doors, and only carefully censored transcripts on the proceedings were given to the press.

Nonetheless, a fairly clear picture emerged. Administration witnesses defended the changing stories about the U-2 mission as the best available tactics when the U. S. had been caught red-handed. But they did concede that moves of the various agencies involved in the crisis might have been better coordinated.

• **Fulbright Sums Up**—Senate Foreign Relations Committee Chmn. J. William Fulbright (D-Ark.) at midweek said of the President's decision to take personal responsibility for the U-2 incident: "I have not seen anything which per-

CHMN. J. William Fulbright presides over hearings. Afterward, he remained unconvinced President acted wisely in U-2 affair.

CENSORS Charles Bohlen, State Dept. (left), Richard Helms, CIA, put testimony through security sieve before release.

CIA CHIEF Allen Dulles heads for committee room to give his version. His remarks were almost completely censored.

suades me that it was a wise decision." But after hearing Dulles, he added: "The questionable decisions were not made by the intelligence agency but by political officers."

Fulbright's studied effort to take as much political sting as possible out of his committee's investigation of the U-2 affair reflected an effort by both Republican and Democratic leaders to refrain, at least for the time being, from exploiting the incident as a campaign issue.

The leading candidates in both parties also played down, in midweek statments, the political aspects of the collapse of the summit. In fact, Vice-President Nixon, and Senators Lyndon Johnson, Stuart Symington, and John Kennedy agreed, with varying qualifications, that for some time to come the U. S. should shun the risks of top level diplomacy and rely instead upon traditional diplomatic machinery to improve relations with the Soviet Union. This lent strength to the growing feeling in the U. S. that a summit conference almost certainly won't be held for a long time—much longer than the six to eight months suggested by Khrushchev.

The caution with which the politicians are handling the summit issue this week basically stems from their feeling that in the present uncertain international situation the issue could prove to be a two-edged weapon in domestic politics.

Sen. George Aiken (R-Vt.) summed up this feeling on leaving one of the sessions of the Senate Foreign Relations Committee hearings. He said, "Even members of the same party can't agree on whether there's any hay in it."

While the Senate hearings ground forward on Capitol Hill, the professional diplomats focused on the new situation created by the summit collapse.

III. Changed Climate

Their concern this week is not so much that the Soviet Union may embark deliberately on an aggressive policy. Rather, they fear the results of broken top-level communications and slowed progress toward easier East-West relations. They foresee a gradual increase in tension and uncertainty.

Advocates of tougher policies on both sides of the iron curtain almost inevitably will get a fuller hearing. Already there are reports that the Soviet press is reviving its intermittent campaign for greater popular "vigilance" against saboteurs and spies. Tighter thought control might follow.

• **Rocket Order**—An example of the dangers is Marshal Malinovsky's grim announcement this week that he had given orders to Soviet rocket forces to strike at any airfield from which a plane takes off and violates the air space of the Soviet Union or its allies. No one in Washington takes the Marshal's threat literally. It seems inconceivable that Soviet leaders would give local commanders the power to touch off war by retaliating against casual violations of Soviet air frontiers.

But Malinovsky's speech undoubtedly does herald a Soviet propaganda campaign, exploiting the U-2 incident to frighten U. S. allies into limiting or even denying the use of their bases.

• **Less Information**—A related source of increased East-West tension also has some officials worried.

Because of Soviet blustering over the U-2 incident, U-2 reconnaissance flights from allied bases will be impossible for an indefinite time. Two or more years from now, orbiting satellites will be providing reconnaissance, and more and more elements of these new surveillance systems will be coming into use in the meantime (page 30). But there will still be an interim period when the U. S. will know less about Soviet offensive and defensive power than it has in recent months. This relative ignorance could have dangerous consequences.

The Soviets will be tempted to exploit it for diplomatic advantage. And on the U. S. side, fear that the Soviet Union may have significantly altered the balance of power could increase alarm over the danger of surprise attack. Some officials see the only answer to this danger in a rapid acceleration of plans for a constant air alert.

• **Missile Diplomacy**—One official put concern on this point in these words this week: "It will require a very high order of Soviet statesmanship to refrain from reckless use of missile diplomacy once enough time has passed since the last U-2 flight so that they know we don't know what they have to throw at us or where it is. Even granting that Khrushchev or a successor is capable of such statesmanship, it will be harder to exercise during a period when the top statemen aren't talking to each other."

What Congress Has Left to Do

SUBJECT	WHAT'S INVOLVED	WHERE IT STANDS
NATIONAL SECURITY		
DEFENSE APPROPRIATIONS	$41-billion for next fiscal year	Passed House; in Senate, where increases will be proposed
FOREIGN AID	$4.1-billion for defense support, development loans, technical assistance, etc.	Authorization bill already passed; House ready to vote on appropriation
INVESTIGATIONS	Review of U-2 incident and summit collapse	Senate Foreign Relations Committee holding closed hearings
WELFARE		
DEPRESSED AREAS	Administration proposed $180-million loans Eisenhower had vetoed Democratic bill	Bills introduced; little chance of further action
SELF-EMPLOYED RETIREMENT	House has passed bill giving tax deduction for payments into approved program	Senate Finance Committee ready to act; chances fair to good
SOCIAL SECURITY	Eliminate 50-year age requirement for disability eligibility; extend coverage, relax ceiling on allowable outside income	House Ways & Means Committee considering; Congress probably will act
AID TO SCHOOLS	A four-year $1.3-billion bill for matching grants for school construction	House passed; Senate passed similar bill; chances hang on settlement of anti-segregation amendment
HOUSING	Aid for urban renewal, college housing, support of home mortgages through FNMA	House passed $1-billion for Fanny Mae, is considering another $1-billion for urban renewal, Senate may moderate House bill
MEDICAL AID TO AGED	Democrats want to give aid under Social Security law; Administration wants to establish voluntary plan with federal contribution, outside of Social Security	Being studied by House Ways & Means Committee, with a chance of some decision
LABOR		
MINIMUM WAGE	Increase in $1-an-hour minimum. Original Democratic plan was a raise to $1.25; now Democrats and unions willing to compromise	Bills in committee; leaders working on broader coverage and a raise, but less than $1.25 rate now
ON-SITE PICKETING	Bill to allow construction unions to picket for organizing	House Labor Committee has approved, but bill is hung up in Rules Committee
TAXES		
MOTOR FUELS	½ ¢-per-gal. increase in federal tax for highway trust fund	Pigeonholed in House Ways & Means Committee; no action expected
FOREIGN INVESTMENT	Package of tax benefits for U. S. investors in underdeveloped areas	Passed House, now in Senate Finance Committee with 50-50 chance
KOREAN TAX EXTENSIONS	Continuing 52% corporate rate and various excises	Passage certain
DEBT CEILING	One-year extension of $292-billion federal debt ceiling	House Ways & Means Committee has approved; passage certain
BOND INTEREST		
RATES	Lifting of 4¼% ceiling on more than 5-year bonds	Ways & Means approved a compromise; chances dim
GENERAL GOVERNMENT		
FEDERAL PAYROLLS	Raises for civil service workers, $810-million a year	House Committee has approved; now in Rules Committee
POSTAL RATES	A $500-million rate increase	Hearings still going on; chances dim

Before It Can Head for Home

The adjournment fever—an old and familiar malady in Washington—is showing up in Congress this year with troublesome complications.

There are only four weeks left to clear up a crowded legislative schedule (chart) if members are going to get out of town by the July 4 deadline set last January by leaders of both parties. But international tensions and Presidential politics are forcing postponement of final decisions in a dozen areas. The result could be one of the worst legislative log-jams in years, with the outcome of many key issues in doubt almost to Getaway Day.

If the Soviets merely continue to make threatening speeches, the collapse of the summit will be taken pretty much in stride by the lawmakers. Neither the investigation by the Senate Foreign Relations Committee (page 25) nor the outbreak of demands for higher spending levels (BW—May28'60,p28) will seriously jam the next four weeks. But if the Soviets or their allies take overt steps to heighten tension anywhere in the world, then adjournment plans would be scrapped immediately.

• **Nixon Active**—Vice-Pres. Richard M. Nixon and three Democratic aspirants for the Presidential nomination are deeply involved in pre-adjournment maneuvers.

Nixon, in effect, has been laying down his own legislative program the past several months.

"Members of Congress and even Administration leaders are turning to Nixon more and more," a Nixon aide says.

An example is the school aid bill. To try to get a bill through Congress that the President will not veto, Nixon first met with Eisenhower in the White House, then with House GOP leader Charles A. Halleck. A few hours later, Secy. Arthur Flemming of the Department of Health, Education & Welfare dispatched a letter to Republican members of the House liberalizing the Administration's position.

Nixon is confronted with a series of other delicate decisions in the welfare field. He wants to avoid the impression that Eisenhower is using the veto power to halt social legislation, but each time he moves toward a more liberal position, he gets mail from Republican stalwarts accusing him of adopting Democratic issues. When his role in developing the Administration medical aid bill became known, he was charged with favoring socialized medicine.

He invited the criticism of some economizers by urging Republicans in Congress to support the President's foreign aid spending program. When Eisenhower vetoed a bill to aid depressed areas in the U. S., Nixon was among Administration leaders who urged that a compromise bill be offered.

• **Democratic Hopefuls**—Among Democrats who seek the nomination, Senate Majority Leader Lyndon B. Johnson has the most to gain—or lose—in the closing rush.

His chief talking point for the nomination is that he is a tested leader with a record of solid accomplishment. If the legislative record of the next four weeks bears out this claim, Johnson will go to his party's convention in Los Angeles with a solid position from which to maneuver for delegates. But if the big Democratic issues—such as school aid, a minimum wage increase, increased defense appropriations, housing, and health aid for the aged—are fouled up in adjournment in-fighting, he'll be badly hurt.

Sen. John F. Kennedy, winner of the Democratic primary sweepstakes, is forced pretty much to the sidelines in the next few weeks as Johnson makes his bid. Sen. Stuart Symington, the third Democratic contender, is pushing for a $3.5-billion rise in defense spending as his major legislative effort, but even this will be overshadowed by Johnson's turn in the spotlight.

• **Johnson Strategy**—Maneuvering over minimum wage legislation shows how Johnson is using his power as majority leader. Twice last week, Kennedy hoped the Senate Labor Committee would meet to approve his version of minimum wage legislation, which calls for a rise from $1 an hour to $1.25.

Each time, Johnson called the Senate into session at 10 a.m., two hours earlier than usual and at the time set by the committee for its own meeting. Under Senate rules, a committee can meet while the Senate is in session only with unanimous consent, and GOP leader Everett Dirksen objected each time.

Johnson's strategy, apparently, is to keep Kennedy's bill bottled up in committee until the House has passed a minimum wage bill. He will then use the House version in the Senate, perhaps offering liberalizing amendments of his own.

• **School Aid**—Johnson—like Nixon—has a political stake in the school bill tangle.

House and Senate conferees are trying this week to close wide gaps between bills passed by the two houses. The House version contains a non-segregation section that would probably lead to a filibuster and possible defeat in the Senate; the Senate version allows some federal funds to be used for teacher salaries, a provision opposed by many House members.

Even if these disputed points are knocked out by agreement of the conferees, the bill could still be derailed either by the powerful and unenthusiastic House Rules Committee or by a Presidential veto.

For six years, efforts to get an aid-to-education bill through Congress have failed. If Johnson, with the help of his campaign manager, House Speaker Sam Rayburn, could maneuver a compromise bill through both houses, and Nixon could prevail on the President to sign it, a potentially touchy issue would be lifted out of the coming campaign.

• **Other Warm Issues**—On another hotly disputed issue—aid to chronically depressed areas in the U. S.—the Democrats apparently have decided not to seek a compromise. After Eisenhower had vetoed a bill passed by Democrats over Republican opposition, the Administration offered a plan for $180-million in loans to distressed areas. Johnson and Rayburn are making no move to start this through the legislative mill, and Democratic candidates seem willing to use the issue—and the veto—in the campaign, rather than settle it on GOP terms.

Here are some other politically potent issues that await action:

Health care for the aged. The House Ways & Means Committee is making an effort to iron out differences between the Democratic Forand bill and an Administration proposal. If a bill does not get out of committee shortly, the Democratic leaders will probably sidetrack the issue until next year.

Housing. A bill sponsored by Rep. Albert Rains (D-Ala.) and already passed by the House is in difficulty. It calls for $1-billion for the purchase of home mortgages by the Federal National Mortgage Assn. Senators active in housing legislation think this sum is too large and that any housing bill should provide something for urban renewal and college housing, which the Rains bill fails to mention. Johnson may move in, to try to get a bill passed that Eisenhower might sign.

Foreign aid. Plans of the Democratic leaders to cut foreign aid in order to pay for increases in domestic welfare programs have been laid aside since the collapse of the summit. Johnson himself talked earlier as though he might favor reducing aid. Now, however, there is a trend toward supporting the President's requests for $4.1-billion in appropriations, and if the Soviets maintain their present line of tough talk, Eisenhower and Nixon may score a major victory.

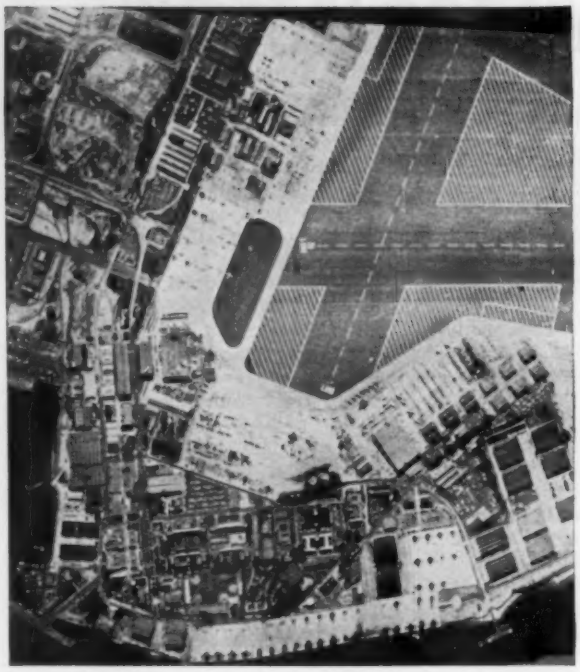
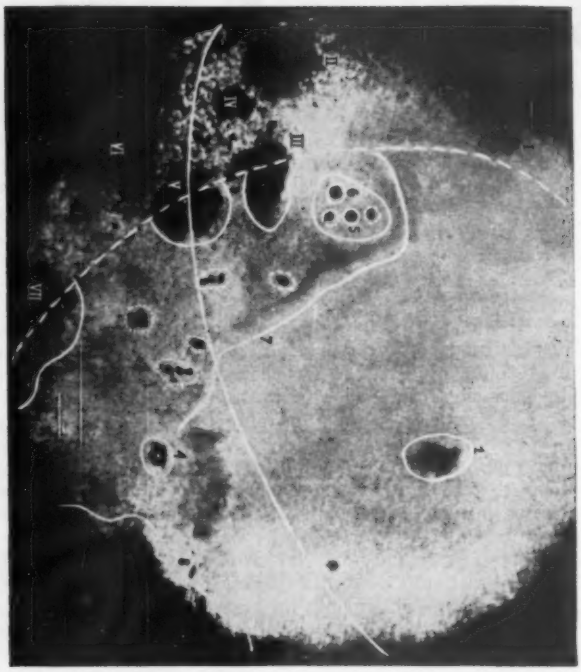


PHOTO PLANE takes reconnaissance picture in air, then delivers film back to ground for developing and study. This optical photo of San Diego Naval Air Station was snapped from a U-2 flying at altitude of more than 13 miles.



SATELLITE with optical camera aboard goes one step better: It can telemeter picture to earth or send film back by capsule. This view of far side of moon was obtained by equipment aboard Soviet Lunik III from 37,500 to 43,750 miles away.

Spies in the Sky Are Groomed

The discovery that the U. S. has been taking detailed pictures of Russia's military bases from a U-2 plane 15 miles high has already broken up a summit conference and seriously upset relations between the two nations.

Actually, the diplomatic turmoil is only the first result of a group of new technical developments that will profoundly affect the whole world's military and political policies over the next two or three years. These developments will make it possible for this country—and presumably any other major country—to keep a detailed, full-time watch on every significant military movement anywhere on earth.

Substantially, all the equipment needed to do this job is now in existence. A complete surveillance system based on the use of observation satellites will be in operation no later than 1965 and probably earlier. Almost month by month, between now and then, more elements of such a system will be coming into use.

• **Steps Ahead**—Here are a few facts that indicate how far scientists have progressed in the past decade:

• A high-acuity camera already developed and delivered to the Air Force can identify an object only 2 ft. long from a height of 100,000 ft.—and photograph it while traveling at twice the speed of sound.

• The most recent infrared cameras not only can spot a fired missile but, from more than 100 miles away, can identify the missile by name as it streaks off the launching pad. These cameras have already been tested on high-flying planes during firings at Cape Canaveral.

• Improvements in the chemistry of film make it possible to record 25 times more detail on a given footage than could be recorded 10 years ago, without sacrificing any quality of the image.

• **Hurdles Passed**—This seems to be one of those times in the history of scientific development when the pieces of a complicated puzzle fall neatly into place almost all at once. Researchers are quick to point out that there will be tricky engineering problems to solve before an airborne surveillance system can be counted on to monitor military activities all over the world. But the major scientific questions have all been answered.

With a U. S. surveillance network coming closer and closer to operation, the nation's military thinking has already started to change. Eventually, knowledge of the system will affect relations with allies and with the Soviet Union.

• **Three Parts**—As it stands now, the surveillance system will have three principal parts—the Ballistic Missile Early Warning System (BMEWS), the Midas satellite, and the Samos satellite.

The first BMEWS station has already gone into partial operation, in Thule, Greenland. Work on two others, in Alaska and Britain, was speeded by a Defense Dept. reshuffling of funds in late March.

BMEWS' primary job will be to keep a curtain of radio frequency over the Far North to detect any oncoming object. If a missile is spotted, BMEWS will give a 15-minute warning to the Strategic Air Command to get its planes off the ground and away from possible danger.

But the line will have an important secondary assignment—to link the Samos and Midas satellites. If the optical cameras aboard Samos spot something that looks suspicious, BMEWS stations will direct Midas' infrared cameras to the area.

• **Cameras in Space**—Details of the camera equipment to be toted into space by Samos have not yet been disclosed by the Air Force. But it's a good bet that early satellites in the fleet will

TV CAMERA on satellite does away with delay needed to develop other films: It gives ground monitors a view of activity anywhere on earth at the instant it is occurring. This is vista of Lower California from U. S. Tiros.

INFRARED sensors react to heat and thus detect size and shape of oncoming objects, such as missiles, from thousands of miles away. The sensors have been tested on supersonic planes and high-flying balloons; they were placed aboard U. S. observation satellite Midas last month. Better lenses, cooling devices, and optical systems have vastly increased their sensitivity. The sensors can now be used on vehicles traveling faster than 10,000 mph. Their chief drawbacks are that they can scan only a limited area at a time and that two sensors are needed to estimate the distance of an object.

RADAR MAPPING from the air has been improved enough to make it especially effective in spotting moving objects. In the past, the image from airborne radar has been relatively poor because aircraft have been able to carry only a fairly small antenna. But scientists have recently learned how to make a small antenna perform as well as a very long one. They do this by taking advantage of the forward motion of the plane or satellite. In addition, new data processing techniques are used to store and process the radar image.

to Reconnoiter the World

carry two types of cameras into their polar orbits:

• An optical camera will take fine detailed photos of the earth. The film will be ejected, on command, for developing on the ground.

• Television cameras and equipment will make it possible for ground observers to monitor any unusual activity while it is taking place.

• **Tiros Proves the Point**—The Tiros weather satellite has already proved that TV equipment can take a series of still photos to be either stored or transmitted directly to earth. Using RCA-developed cameras about the size of a water glass, Tiros was able to get an 800-mile view with a wide-angle lens, plus an 80-mile vista of the same area with narrow-angle equipment. The Tiros camera consists of only two parts—a half-inch TV-camera tube especially designed for satellites and a focal plane shutter making it possible to store still pictures on the tube's screen.

But Tiros' accomplishments are only a sample of the prowess Samos will display, experts are saying. TV and infrared monitoring will supposedly be even more foolproof with a thing called a Solidicon that is already in an advanced stage of development. This is a single crystal semiconductor disk about the size of a quarter, about an inch in diameter.

The Solidicon will be able to register an image, store it for a time, and then read what it has seen in a series of pulses for telemetering to a ground station. It will replace complicated electronic support equipment.

Electro-Optical Systems, Inc., developer of the Solidicon, says that it will be usable in any kind of camera between the lens and shutter. With the help of a simple, lightweight computer, it can be told in advance what to look for. This way, it will be able to conserve power by shooting only pictures with military significance.

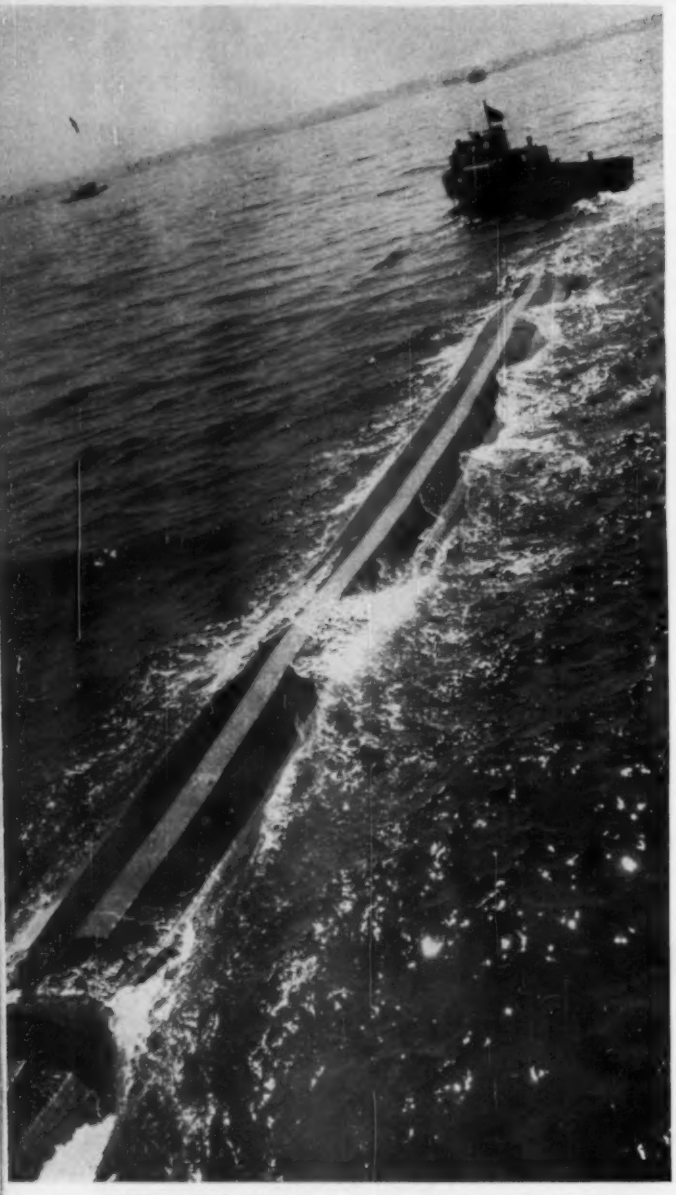
• **Other Half**—Midas, the other half of the satellite spy team, will carry infrared sensors to detect heat from the exhaust flames of missiles as they are being fired. It will also profit from recent developments such as the Solidicon.

Currently available infrared equipment has taken pictures from as high as 20 miles above the earth to show airstrips, docks, factories, and cars in sharp detail. Much of the credit for the strides in infrared goes to the development of new lens materials and devices for keeping the sensor elements extremely cold (BW—Apr.2'60,p126)—important because they work by reacting to heat. But the infrared monitoring satellite is now technically feasible because a number of developments have come along at about the same time—as is the case with TV and optical camera equipment.

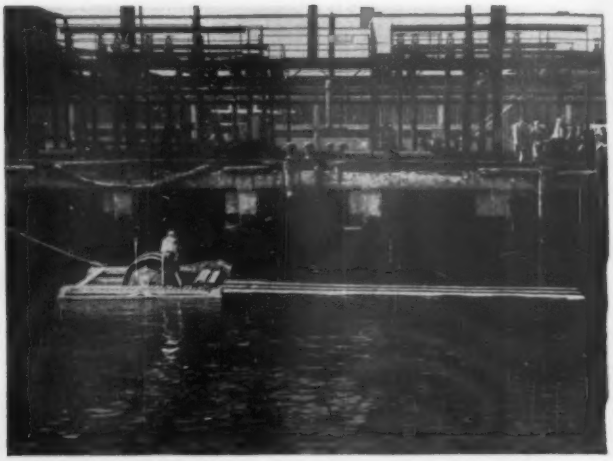
• **Canny Observers**—The art of surveillance is so sophisticated today that it doesn't matter how fast a drone or satellite is traveling—the camera it carries can get accurate pictures whatever the speed. Similarly, it will soon make no difference how high the camera or sensing element is above the earth. The quality of information sent back will be good whether the detecting gear is 20 or 200 miles up.

Until bigger rocket boosters can be built, it will be necessary to fire satellites on a fairly regular schedule to keep information flowing back steadily. Present boosters limit the payload and the supply of power any satellite can carry aloft with it.

But the more powerful rockets—the last ingredient of the surveillance system scheduled to arrive—should be available by the mid-1960s. Then it should literally be possible to count the number of boxcars moving on railroad tracks all over the world at any given moment —if anyone wants to know.



MORE THAN 12,000 gal. of oil go to sea in New York Harbor. This flexible "tank" is made of nylon, 0.15-in. thick, coated on the outside with Neoprene, on the inside with acrylonitrile rubber.



EMPTY TANK is reeled or unreeled from a pontoon in about 15 minutes. Reeled up, the empty tank can be towed back on its pontoons for another load, or nested on the towing boat.

IT DOESN'T TAKE much power to tow the filled Dracone tank, which has an inflatable stabilizer near the rear to aid in steering. The unit draws little water and can be turned in very little space.

An Oil Tanker You Can Bend

Sea monsters may be out of date, but the Dracone is not. This slinky, towable container, named from the Greek word for serpent, made its American debut last month (pictures) in New York Harbor.

It was originally conceived by several Cambridge University professors as the answer to the temporary tanker shortage created by the Suez crisis. Now, after careful evaluation and rigid tank testing, it is being looked upon as a handy way of transporting smaller quantities of petroleum products around in corners of the world where oil terminal facilities are inconvenient.

Esso Petroleum Co., Ltd., for example, uses several to haul petroleum from Southampton, England, to the Isle of Wight. Three or four others are already at work in Africa and Asia.

• **Simple to Use**—For these off-beat, specialized uses, Dracones have a simplicity that will charm even the most hard-boiled operations manager. A 35-tonner, which is 140 ft. long and costs $14,110, can be filled up in about 15 minutes and pumped out at its destination in less than an hour. A small launch can tow one handily, and if it happens to bump aground on the way, little harm is done.

Returning the empty Dracone sleeve can be handled several ways. It can be wound on a pontoon-mounted reel and towed back, or the reel can be lifted on the towing boat itself or into a truck.

• **Range of Sizes**—Dracone Operation, Ltd., which was formed to push the commercial sales of these rubberized nylon containers, can provide them in sizes ranging from 15-ton capacity (70 ft. long) to 320-ton (200 ft. long).

The limit on size, according to Dracone officials, is around 1,000 tons. Beyond this point, the towing drag reaches the point where a specially designed tug would be required, and the cost of that would scuttle any savings from use of inflatable containers.

A Clue to GOP Chances for 1960

● **The special Senatorial election in North Dakota this month may furnish some clues to whether the Republicans can win in November.**

● **Nixon and his advisers realize the Vice-President will not be a ticket leader in the same sense that Eisenhower was in 1952 and 1956.**

● **His political fate will be more closely linked with that of local candidates.**

On Tuesday, June 28, North Dakota holds a special Senatorial election that has Republican Party strategists—from Vice-Pres. Richard M. Nixon on down—biting their nails.

The contest, between Republican Gov. John E. Davis and Democratic Rep. Quentin Burdick for the remaining four years of the late GOP Sen. William Langer's term, easily could turn out to be one of the year's most vital. The result will provide some clues, at least, to the question: Can the Republicans win in 1960?

Davis is campaigning hard and—testimony to the importance that the national party chieftains attach to the race—with all the help he can conceivably use from Washington Republican headquarters. But as of this week, private North Dakota polls indicate he is running several percentage points behind Burdick.

• **Hard Fight**—No matter what the outcome, this situation—the GOP having to fight a desperate campaign in one of the Midwestern farm states with a rock-ribbed Republican tradition—is evidence that the Republicans know they face a hard fight to keep control of the executive branch.

Nixon, the GOP Presidential nominee apparent, says, "The day of 'safe' states for either party is over. We do not intend . . . to take any usually Republican states for granted."

Nixon's political fate and that of a "local candidate" such as Gov. Davis are, in this election year, closely linked. At first glance, this may seem a bit far-fetched. But Nixon and his advisers do not think so, and the Vice-President intends to make at least one personal appearance in North Dakota as a boon for Davis.

I. Eyes on the House

It is an oversimplification, but only a slight one, to describe the basic Republican strategy for victory in 1960 in these terms: The Presidential candidate will be riding on the coattails of Congressional candidates, rather than the other way around.

Put another way, the prevalent Republican feeling is that the coming campaign should be staged, in personality terms, diametrically opposite from 1952 and 1956 when Pres. Eisenhower's popular appeal was the dominant factor. Neither Nixon nor his advisers expect the Vice-President will be a ticket leader in the same sense as was Eisenhower, whose personal political magnetism generally is credited with attracting the "independent" votes that tipped the balance in the last two Presidential elections.

Appraising the current situation, Republican National Chmn. Thruston B. Morton, a Kentucky senator who took over the party leadership some 13 months ago, says, "If we can win 200 House seats in November, we will win the Presidency, too."

• **Achilles' Heel**—Morton agrees that the Farm Belt is "our Achilles' heel"—most precisely, the wheat-growing states in the Farm Belt. It is in these states that Republican fortunes have slid most dramatically during the Eisenhower years, a point best illustrated by the fact that Democratic governors preside now in Kansas, Nebraska, Iowa, South Dakota, and Wisconsin—once solid citadels of Republicanism.

The party's hopes in 1960 depend heavily upon making a comeback in the Midwest.

With Nixon's support at every turn, Morton has spent a great deal of his time preaching to local Republican organizations the necessity for coming up with bright, aggressive, articulate Congressional candidates.

To fulfill Morton's formula for victory in November, Republicans will have to pick up at least 47 House seats now held by Democrats. In the 1958 Congressional elections—a GOP disaster unrivaled since early New Deal days—Republicans won only 153 of the 436 House places.

• **Groundwork**—With guidance from Washington, preliminary campaign work already has begun among the rank and file of labor, racial minorities, other identifiable voting blocs in 90-odd Congressional districts that the Republicans view as potentially most vulnerable this fall.

Of these 90-odd seats, 45 are "marginal"—that is, held now by Democrats who won in 1958 with 55% or less of the vote. The remainder are either in border states or big cities, and the intensity of the Republican fight for these will vary a great deal, depending upon the identity of the Democrats' Presidential nominee.

For example, if Sen. Lyndon B. Johnson of Texas should become the top man on the Democratic ticket, then Republicans will bear down much harder with money and other efforts aimed at dislodging Democrats from big city House seats, on the theory that voter hostility to Johnson is strongest in the metropolitan areas of the North and East. Conversely, heaviest emphasis will go into border state districts if an Easterner or a political "liberal" is nominated by the Democrats.

II. Nixon at the Helm

Any balance sheet on the Republican strategic position as of now starts with two big pluses:

• The party has had control of the executive branch since 1953, an immense advantage insofar as prestige, publicity, and patronage are concerned. Whether the public assents to keeping the GOP "in" remains to be seen, but there is no evidence of public determination—such as befell the Democrats in 1952—to "throw the rascals out."

• Nixon, the Presidential nominee apparent, can boast with some logic that he is the best-trained Vice-President in modern history.

• **Vice-Presidential Image**—Nixon's travels abroad as an official of the U.S. have been extensive, giving rise to the image of one at least acquainted with world leaders and international problems. During the past two years, most important foreign officials visiting Washington have made it a point—albeit a little-publicized point—to confer with Nixon.

At home, sometimes openly and sometimes behind scenes, Nixon has been exerting more influence on the shape of Administration legislative proposals.

At this time, for example, Nixon openly has taken command of the Administration's fight to forestall Congressional cuts in appropriations for foreign aid. Less openly, working through

GOP legislative lieutenants and staunch political allies in the Cabinet, Nixon has helped to nudge Eisenhower toward somewhat more liberal positions than before on such issues as medical care for the aged, minimum wage legislation, economic aid for depressed areas.

Nixon is not home entirely free insofar as the nomination goes, but the chance of his lone serious rival—New York's Gov. Nelson A. Rockfeller—appears to depend entirely on a massive shift of public opinion toward condemnation of the Administration's handling of foreign affairs. There is no sign of such a shift.

• **Minus Marks**—On the GOP balance sheet, there are some minus marks, and some of them are formidable.

The most obvious, and perhaps the most formidable, is that the Republican Party is a minority party. Sen. Morton estimates that among every 100 voters who consider themselves loyal partisans of either party, Democrats outnumber Republicans 60-to-40.

Eisenhower, the war hero who placed himself above partisan politics, overcame this handicap largely on the basis of personality—getting into the GOP column the sizable bloc of voters who consider themselves, no matter how they register, as "independents." For Nixon, the capture of the "independent" appears to be more difficult. The Vice-President is a partisan political fighter, and a battle-scarred one, at that.

• **Nixon's Tactics**—His strategy is beginning to emerge, in part at least. The decision to rely heavily on Congressional and other local races for party-carrying momentum is a piece of the strategic pattern. Before the campaign is over, something more than $2-million probably will go into House races alone.

Another piece of the strategy is Nixon's moving, delicately but perceptibly, to the left of Eisenhower on the political spectrum. The delicacy of the Vice-President's task here is difficult to overstate, for he is caught in a crossfire between the party's ultraconservative and liberal wings. The situation is so tense that some weeks back, for example, Nixon was accused of advocating socialized medicine. His chief offense at the time, insiders say, was to hold a series of meetings with Secy. Arthur Flemming of Health, Education & Welfare on a Republican bill to counter the Forand health bill being pushed by Democrats in Congress.

The GOP split, not so well-publicized and perhaps not so deep or abiding as the North-South schism in the Democratic Party, is nonetheless real. One of Nixon's big problems, once the nomination falls to him and he can begin operating on his own, is to keep the Republican right from dragging its feet and handicapping his campaign for the necessary "independent" votes.

Offshore Oil Claims Settled

Two states—Texas and Florida—are winners in Supreme Court finding. Three—Louisiana, Alabama, Mississippi—are losers, and Louisiana is hit the hardest of all.

The major dispute over ownership of the oil-rich submerged lands lying beyond the three-mile limit under the Gulf of Mexico was resolved this week by the U. S. Supreme Court.

Florida and Texas, said the court in a split decision, have title to submerged lands extending 10.5 miles from their coastlines into the Gulf. But Alabama, Louisiana, and Mississippi have title only three miles out into the Gulf.

Thus, beyond these limits and extending to the outer edge of the Continental Shelf, according to the court, the federal government has the right to lease drilling rights and collect royalties on oil production.

By treating state claims two different ways, the court's ruling is bound to foster another attempt at Congressional legislation on this thorny issue.

• **Louisiana's Case**—Louisiana stands to lose the most money from the high court's ruling. About $308-million in royalties on oil-producing operations in all the disputed areas is now being held in escrow. Of this amount, about $225-million comes from leases off Louisiana. Most of it comes from activities in the belt between three and 10.5 miles from the coast—the belt that the court says belongs to the federal government except in the cases of Florida and Texas.

Louisiana says it will continue the fight, and the other disappointed Gulf states may follow suit. Louisiana Atty. Gen. Jack Gremillion and Sen. Russell Long (D-La.) both have promised to push for legislation by Congress next session to upset the court's ruling on Louisiana's claim.

• **Future Effect**—For oil companies operating in the Gulf area, the court's ruling poses no immediate problems. Their primary interest has been only whether the federal or a state government was to be the landlord. Leases already in existence have all been approved by both the federal government and the states.

There are bound to be legal complications, though. This week's ruling only decides the title to the disputed belt—it does not specify the precise coastline from which the mileage is to be measured. The court has reserved jurisdiction over the cases in order to see that its basic ruling can be carried out. Fixing coastlines may well require years of legal maneuvering.

This is particularly true in the case of Louisiana. The court notes that Louisiana is entitled to submerged land rights "to a distance no greater than three miles from its coastline, wherever those lines may ultimately be shown to be." The problem here involves the many offshore islands.

Louisiana urged the court to accept a line that the state adopted from navigation regulations issued by the Coast Guard. But the court declined to pass on this issue, obviously reserving it for later litigation.

• **Long Struggle**—The court ruling this week is the latest in the more than 20-year-old dispute between the coastal states and the federal government over their respective rights to exploit oil and other resources of offshore submerged lands.

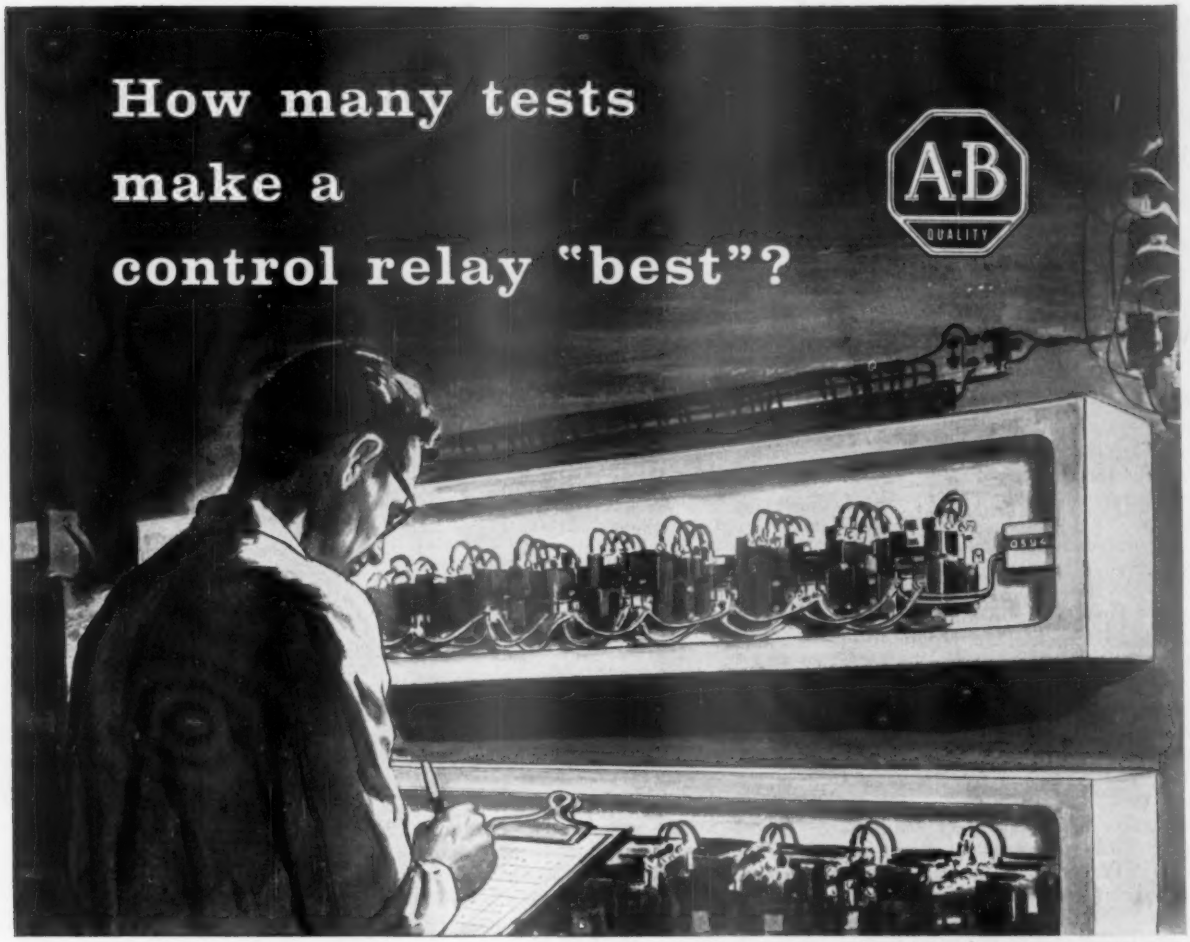
In a 1947 California case, the Supreme Court ruled that the federal government has "paramount rights" in all offshore submerged lands; it applied this principle again in 1950 in cases with Texas and Louisiana.

After a prolonged political drive by the coastal states, which ultimately became entangled in the 1952 Presidential campaign, Congress adopted the 1953 Submerged Lands Act. This law ceded to all Atlantic and Pacific coastal states rights to submerged lands out to the three-mile limit.

But in the case of the Gulf Coast states, the 1953 law said the seaward boundary would be "as they existed at the time such state became a member of the Union, or as heretofore approved by the Congress" but in no event extending more than three marine leagues (10.5 miles) into the Gulf.

• **Hard to Tell**—It was this provision that the court had to apply in judging the states' claims. Justice John M. Harlan, who wrote the principal opinion, declared the 1953 act was so "ill-drawn" that it required a "shockingly long" opinion to interpret it. He used 81 pages to decide the cases of Alabama, Louisiana, Mississippi, and Texas. Justice Hugo Black wrote the decision in the Florida case.

Basically, the court had to pass judgment on the volumes of legal and political history that the states and the federal government produced to support their arguments. In the end, the seven justices who participated in the decisions (Chief Justice Earl Warren and Justice Tom Clark did not) split three ways on the various state claims.



This engineer is "reading" the number of millions of trouble free operations on Allen-Bradley industrial relays on accelerated life tests.

Round-the-clock product performance tests are "standard" at Allen-Bradley

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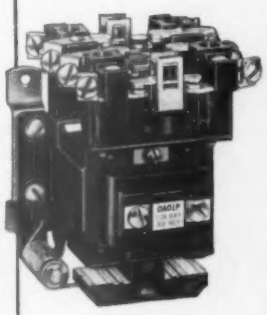

IMPROVED BULLETIN 700 CONTROL RELAYS

Allen-Bradley relays are made in many types, including the general purpose relay illustrated at the left; universal relays with both normally open and normally closed contacts; and convertible relays having contacts that can be easily changed from normally open to normally closed.

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New Missile Setup for Air Force

● Space Technology Laboratories will bow out of unique role as technical and managerial factotum for program.

● Its role will be split—prime contractors will handle systems engineering, new nonprofit body will do planning.

● This will permit STL's parent—Thompson Ramo Wooldridge—to compete fully for new missile contracts.

The U. S. Air Force and Thompson Ramo Wooldridge, Inc.'s Space Technology Laboratories are putting finishing touches on a plan to end STL's unique and controversial role as technical and managerial factotum for the multibillion-dollar missile program.

A new nonprofit corporation will be set up to act as the Air Force's technical adviser on advanced missile and space plans, taking on many of the research and experimental functions STL has handled.

STL, meantime, will wind up work as systems engineer and technical director for the Atlas, Titan, and Minuteman missiles over the next four years or so. The Los Angeles company will then take its place as a regular bidder for new Air Force missile and space hardware contracts. Right now, both STL and its parent company are barred from production business spawned from the missile projects.

For future missile and space projects, the Air Force will turn to a prime production contractor for the systems engineering and technical management STL has performed.

• **Role**—STL has had a big basketful of powers: setting specifications, evaluating production contractor proposals for the Air Force, ordering design changes, supervising testing, refereeing disputes, pulling together designs of diverse subsystems into one weapon, and monitoring over-all development and production.

In effect, STL has been the Air Force's technical and scientific straw boss over a massive industrial team including 22 prime contractor giants such as Boeing, Martin, Convair, North American Aviation, General Electric, General Motors, and Douglas Aircraft.

In the process, STL (formerly a part of Ramo-Wooldridge Corp. before the latter's merger with Thompson Products, Inc.) has burgeoned from an 18-man outfit handling $2-million worth of business in 1954 to an organization with 1,050 professional employees, vast specialized facilities, and annual sales running close to $100-million.

• **Gripes**—In exercising its functions, STL has rubbed many of the other missile contractors the wrong way. There have been gripes that STL or its parent company can commercially exploit the specialized knowhow acquired through its distinctive management role, and that STL has had access to proprietary secrets of others.

Just as significantly, there has been criticism that while STL has authority for basic design and operational requirements of the ICBMs, some one else has had the responsibility for putting the pieces together.

• **Reasons**—In defense of the arrangement with STL, the Air Force points up the phenomenal success of the program. The Thor IRBM was operational in just under 3½ years from the start of development (STL contractual ties to this missile were cut more than a year ago when bases in Great Britain were set up). The Atlas ICBM became operational in just over five years. By comparison, the B-52 bomber took 9.4 years to develop, the B-58 11.2 years.

The Air Force explains that when the program began few, if any, of the established contractors had the required knowhow. It needed a precocious and specialized outfit to pull the strings on the show. And STL filled the bill.

• **New Switch**—The new switch stems from recommendations from an Air Force advisory committee headed by Dr. Clark B. Millikan of California Institute of Technology.

Millikan's committee concluded that manufacturing contractors are now mature and experienced enough to compete for systems engineering and technical management for future space-age weapon systems. But the committee believes the Air Force still needs the full-time back-up of a civilian, talent-loaded organization with specialized brainpower to do advanced planning and evaluation of later-generation missile and space systems.

Under pressure from the General Accounting Office and the House Government Operations Committee, the Air Force has decided that this should be a nonprofit corporation.

• **Setting It Up**—The new nonprofit corporation, still unnamed, is now being set up. Washington gossip has it that William C. Foster, former Deputy Secy. of Defense and now vice-president of Olin Mathieson Chemical Corp., will head the board, and that Richard E. Horner, associate administrator of the National Aeronautics & Space Administration, is being considered as chief executive officer.

The corporation's tentative charter calls for advanced planning and evaluation of new ideas, "broad-brush" initial system design, technical evaluation of contractor proposals, and technical monitoring (as opposed to the "direction" that STL has supplied) for project progress.

• **STL's Future**—Meanwhile, Air Force negotiations to change STL's status are under way in Los Angeles. A Pentagon official says the final contract will be ready in about two weeks. This will cover the sale of STL's El Segundo R&D complex to the Air Force to house the new corporation. The contract will also make provision for the new corporation's recruitment of STL personnel. The Pentagon expects it to have a staff of about 300 scientists and engineers within a year.

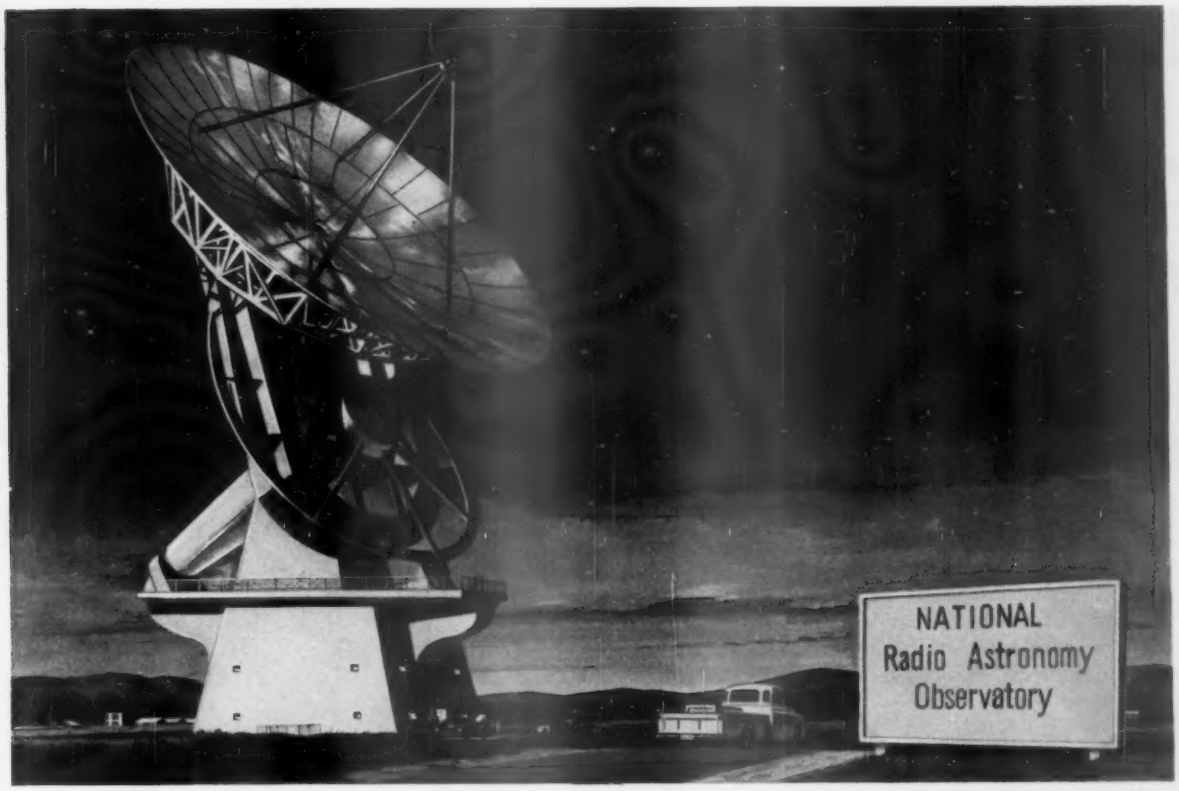
Finally, the contract will spell out STL's commitment on existing Air Force projects. The company will stick with the three ICBMs until completion of the "essential development phase." Its fee, about 10% of contract costs, will probably continue as is.

STL will also complete its satellite projects for the Air Force, ARPA, the Navy, and NASA.

Up to now, STL has operated autonomously with its own board of directors, headed by Dr. James H. Doolittle. As plans now shape up, it will be TRW.

• **And TRW's**—The new setup will leave Thompson Ramo Woolridge free in all respects to become a complete and major competitor in production of hardware and weapons systems for the missile and space age. Its goal has been to move from heavy emphasis on R&D to greater involvement in production.

The one brake on its becoming a full competitor has been Space Technology Laboratories. Though spun off as a separate company, there was still criticism that STL was too closely tied to its parent. And the Air Force barred Thompson Ramo Wooldridge from making hardware for ballistic missiles as long as it was principal stockholder in STL. It will still be restricted as to activity on Atlas, Titan, and Minuteman, but will be free to compete on all future missile and space projects. And it stands to take over experienced scientists and engineers from STL.



This radio telescope is now being constructed by the E. W. Bliss Company of Canton, Ohio, at the National Radio Astronomy Observatory at Green Bank, West Virginia. Nickel-alloyed ductile iron is used for support and control parts to achieve watch-like accuracy in guiding the 5-million-pound instrument. The telescope will be operated by Associated Universities, Inc. for the National Science Foundation.

Eavesdropper at the keyhole of an invisible universe

Objects far out in space that cannot be seen with the most powerful optical telescope can now be studied by astronomers.

They do it with an amazing instrument called the radio telescope which can detect radio waves coming from objects that may be as much as *5 billion light years away!*

It may sound fantastic, but that's exactly what this 140-foot telescope at National Radio Astronomy Observatory will do. And although its moveable parts weigh close to 5 million pounds, watch-like accuracy is being built into every foot, every pound.

Take the cannon-like polar axis shaft, which can be seen pointing skyward in the picture. Sixty-seven feet long and 12 feet across, this shaft will be driven by a gear 85 feet in diameter and a foot thick, with teeth machined to be accurate to within thousandths of an inch.

They'll stay accurate, too. For these parts, as well as the 8 bearing pads supporting the massive assembly, are made of nickel-alloyed ductile iron, a remarkable metal developed by Inco research.

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Don't forget nickel-alloyed ductile iron even if you're not thinking of building a radio telescope anytime soon. This versatile metal has hundreds of applications in every industry.

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Court Says No on Bill to Ease Pru's Boston Taxes, Hints Way Out

The Massachusetts Supreme Judicial Court this week gave an advisory ruling that declared unconstitutional the bill granting a substantial tax break to Prudential Insurance Co. for its Boston office and apartment complex (BW—May7'60,p38). The bill would allow the tax-exempt Massachusetts Turnpike Authority to buy the 31-acre site, build a garage, and lease the air rights to the Pru, which would then pay a relatively small annual charge instead of the city's high real estate tax.

In an unprecedented move, the court accompanied its ruling with a broad hint that **the bill would be O.K. if rewritten to tie the project directly to some such public purpose as slum clearance.**

Meanwhile, the Pru stands firm on its threat to drop the project—in which it has sunk about $13-million already—unless the tax concessions it demands are imbedded in ironclad legislation. The company says the next move is up to city or state.

• • •

Price Cuts in Prescription Drugs Sought as Unions, HIP Plan Own Stores

A pilot project for low-cost sale of prescription drugs to union members is being considered by nine unions in New York City and the non-profit Health Insurance Plan, Inc.

The project, on a non-profit basis, would set up as many as a dozen pharmacies in the city. One idea that is being studied is the possibility of **cutting costs by selling a given drug under its generic name, rather than under various brand names.**

Trade groups representing New York's retail drug stores are opposing the idea. So is one union, which represents retail drug employees and says its members would find fewer jobs.

• • •

Ads Deprecating Auto Accident Awards Stir Court Fight on Press Freedom

A hassle over jury awards in auto accident cases in Washington County, Pa., has blown up into a court fight over freedom of speech and the press.

An insurance association started it by placing ads in two local newspapers, saying that insurance rates are higher in the county because accident awards are higher. The ads were based on a 12-county survey by the State Chamber of Commerce.

Two lawyers promptly sued the insurance group and the newspapers, arguing that the ads would influence jurors in damage suits. They were granted a preliminary injunction forbidding the newspapers to run the ads.

The publishers retorted that the injunction abridged the freedom of the press. This week the President Judge of the Court of Common Pleas dissolved the injunction, saying that the ads and accompanying stories had no doubt already been read by jurors now serving. The judge said he would hear accident cases as usual, but **one of his colleagues threw out a similar case and said he would hear no more in the present term, ending June 10.**

As of now, the lawyer-plaintiffs have asked that the injunction be extended to the whole term, and the publishers have again countered with their press freedom argument. Apparently, the case is headed for a full-scale trial.

• • •

U.S. Lists Exports for Bargaining On Trade Concessions at GATT Talks

U.S. bargainers at the GATT trade negotiations in Geneva next fall will offer concessions on items that constitute 20% of the dollar value of U.S. imports, and will ask for concessions on nearly everything we export. The lists drawn up by the State and Commerce Depts. hew closely to the line of freer trade.

Conspicuous by their absence from the "offer" list of concessions are aluminum, cotton and woolen fabrics and clothing, coal tar and synthetic organic chemicals—all items on which U.S. producers have been demanding more protection.

But the list did include such equally protection-eager items as iron and steel products and a variety of chemicals.

The proposed list will now be combed over in six weeks of hearings by the Tariff Commission and the Inter-Agency Committee for Reciprocity Information. Peril points will be set below which no concession will be made, and industry will have a chance to fight for changes in the list.

• • •

Price Drop Slows Plywood Production

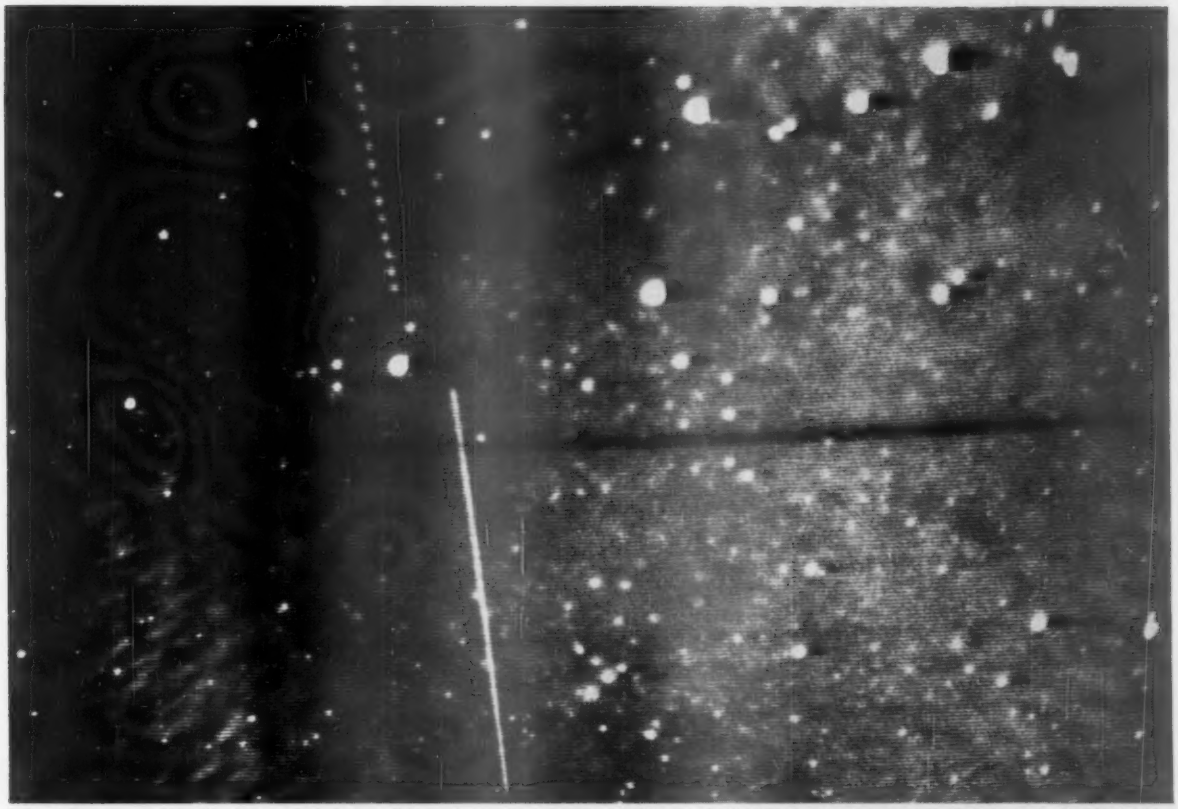
Fifty-eight plywood companies in the Pacific Northwest have curtailed operations sharply in the wake of last week's plunge that carried plywood prices to their lowest point since World War II (BW—May28'60,p20). Between 4,000 and 5,000 workers and loggers are expected to be laid off.

The cutbacks come at a season when production is normally building up to the summer peak. Most of the industry blames the excess supply on over-optimistic production, heavy mill and yard inventories, and a generally weak market.

• • •

Business Briefs

U.S. Steel Export Co. and several associates have been awarded the $61.7-million-plus provisional contract to build a **6,397-ft. bridge across the Tagus River at Lisbon.** The company has 300 days to file its final proposals. The span, largest in Europe and fifth largest in the world, will be financed by the Export-Import Bank and a French banking outfit.



This photo, described below, was taken on Bendix' newly constructed "TV Satellite Tracker", developed as part of Project Space Track for the National Space Surveillance Control Center at Bedford, Mass., under a program sponsored by the Advanced Research Project Agency, Dept. of Defense.

BENDIX TAKES TRACKING PHOTO OF RUSSIAN "SPACE SHIP"

You are looking at probably the world's first tele-photo of the Russian "Space Ship", Sputnik IV. It was taken by scientists at Bendix Research Laboratories as the space vehicle raced across dark Detroit skies at 3:35 A.M., May 18, 1960. Sputnik IV made the solid line of light during a 15-second exposure. The dotted line is its tumbling rocket case which reflected light intermittently as a broken line. The larger bright spots are stars from the Constellation Cassiopeia. The small white spots are faint stars.

The Bendix Satellite Tracker, which took this photo, is a unique telescopic lens-TV combination which magnifies light thousands of times and literally sees in the dark. It presents a "live" picture of a moving satellite on a TV viewing tube. Its TV part was used by the nuclear submarine USS Skate on its historic North Pole cruise. Its ability to see in the dark enabled the crew to look up and find thin spots in the ice pack through which the Skate surfaced safely.

This Tracker is another important Bendix system used to track space vehicles and know what is happening in them. We built, operate and maintain two of the three systems the United States uses to track all satellites. The first, called Minitrack, consists of a chain of stations reaching south from Washington, D. C., to Santiago, Chile, with other stations in California, South Africa, and Australia. It has tracked all satellites emitting radio signals. The other tracking system, called SPASUR, is a series of stations in the United States with special radar equipment which tracks "dark satellites". These emit no radio signal—in fact, their presence may be intended to be secret for hostile reasons.

To tell how missiles or satellites are performing, Bendix telemetering systems transmit complex radio signals to ground stations. As many as 500 channels of information may be transmitted, such as speed, direction, acceleration vibration, and temperature, which permit evaluation of the space vehicle's performance.

Bendix closed-circuit TV helped USS Skate to surface safely on historic North Pole voyage.

Bendix is responsible for the global tracking, communications, and computing systems for Project Mercury—the U. S. man-in-space program.

Bendix also developed methods for steering space vehicles and preventing the "tumbling" depicted above. Bendix reaction controls were successfully used on the U. S. Discoverer series of satellites. To put a man on the moon, it will be necessary to steer the space ship, prevent it from tumbling, and land it right side up.

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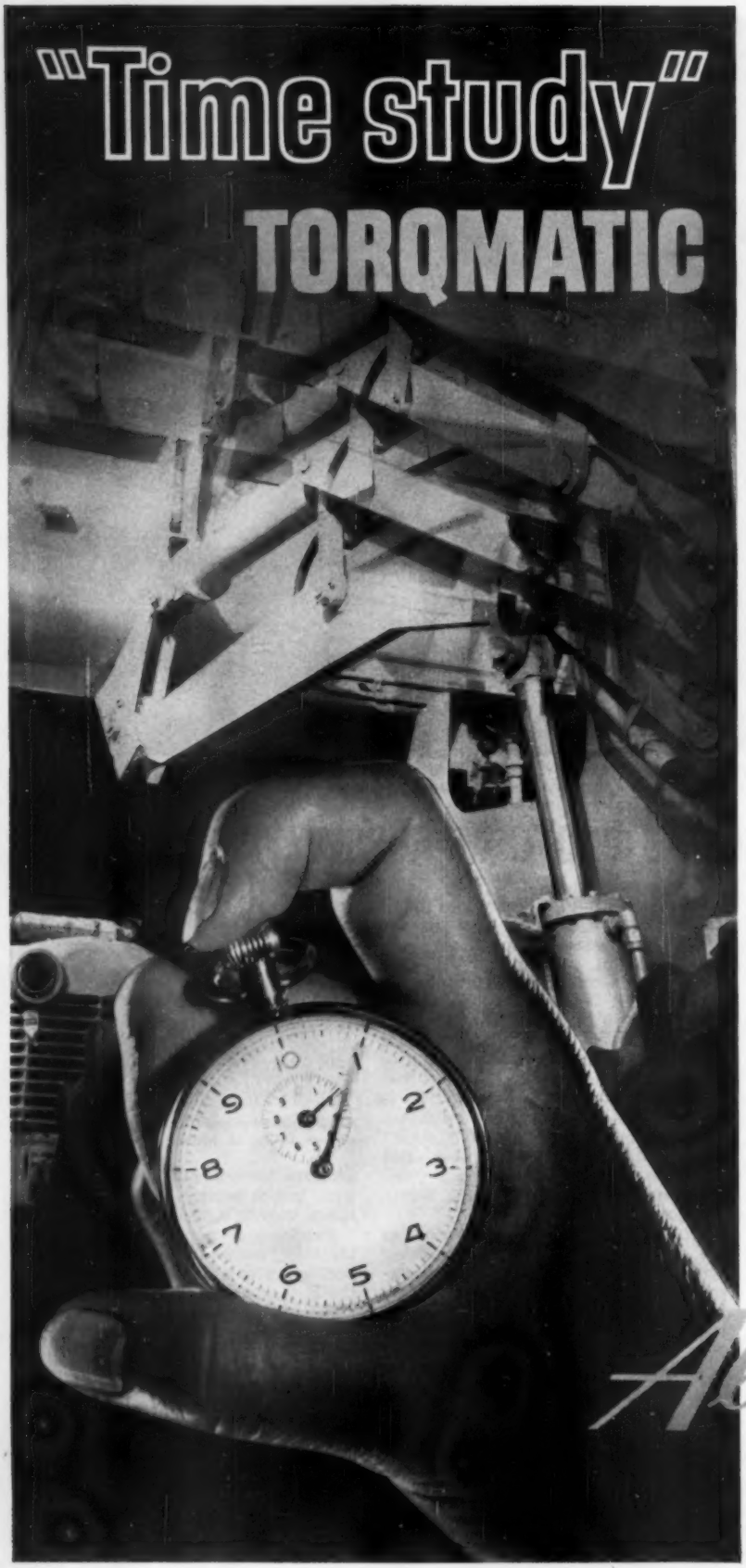

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WASHINGTON OUTLOOK

WASHINGTON
BUREAU
JUNE 4, 1960

Sen. Lyndon Johnson is out to cut down Sen. John F. Kennedy, and you can see the already torrid Democratic Presidential battle turning several degrees hotter.

The nomination is still up for grabs. Even Kennedy, the front man in the field, agrees on that. Johnson, the Senate Majority Leader, has set up Kennedy as his target No. 1. Kennedy has proved to be a tough campaigner, able to take care of himself in the tight situations. But it is doubtful that he has ever been under the guns of a craftier, more skillful political foe than Johnson.

Note the Johnson Line. Depending upon his mood of the moment or the audience at hand, Johnson refers to Kennedy as "a nice young man"—with the accent heavily on young—or he lumps him anonymously into the group of "hack politicians" who have attacked Pres. Eisenhower and the Administration for its handling of foreign affairs.

This is strong stuff, and the Johnson forces acknowledge it, but they figure it's going to take strong stuff to stop Kennedy.

During his just-finished barnstorming tour of the West, Johnson roared to one audience the rhetorical question, "Do you think Pres. Eisenhower should have expressed regrets to Khrushchev?"—a reference to the fiasco at the Four Power summit conference in Paris.

And the audience, joining Johnson in his attack on Kennedy, roared back its answer, "No."

What Kennedy actually said about expressing regrets evidently is going to be used extensively against him. It all began in Oregon nearly three weeks ago when a questioner at a political rally asked what Kennedy would have done in Paris. Here in Kennedy's own words is his extemporaneous answer, which may turn out to be one of the year's more important:

"Once the summit had broken up and once Mr. Khrushchev indicated his refusal to continue, I don't think that the United States could—but he said there were two conditions for continuing. One, that we apologize. I think that might have been possible to do. And that, second, we try those responsible for the [U-2 spy plane] flight. We could not do that. It would be highly unfair because the flight had been authorized and, therefore, that was a condition Mr. Khrushchev knew we couldn't meet—and it indicated that he wanted to break it up. If he had merely asked that the United States should express regret then that would have been a reasonable term. . ."

Can Johnson "get" Kennedy? The consensus among political types hereabouts is that the Texan is more likely to do it than either of the other two major contenders—Sen. Stuart Symington or Adlai E. Stevenson. But the ironic feeling persists that Johnson, even if he cripples the Kennedy run at the nomination, will not get the prize for himself, but only will set it up to be picked off by either Stevenson or Symington.

—•—

Nixon is no longer wooing Rockefeller. Intimates of Vice-Pres. Richard M. Nixon say the cooling-off began even before last week when New York's Gov. Nelson A. Rockefeller suddenly stood up as the lone big holdout against Nixon's nomination for the Presidency (page 33).

Through National Chmn. Thruston B. Morton, Nixon some weeks earlier offered Rockefeller a major role in the party convention—keynote speaker or some similar position. Rockefeller replied publicly to what had begun as private negotiation, writing Morton an open letter saying he didn't even plan to go to the convention and, in effect, that he suspected a Nixon trap to snare him for second place on the GOP ticket.

It is no secret that Nixon and some of his key advisers had, until a few weeks ago, held out hope that the convention would stage an emotional demonstration and "draft" Rockefeller for second place on the ticket. Now that hope is gone, and Nixon and his advisers are more concerned about obtaining Rockefeller's enthusiastic support for the GOP ticket in New York State during the coming campaign. One of the Nixon camp summed it up in a private conversation this week: "Nelson can go on to the convention now without worrying. We don't want him for Vice-President any more."

—•—

It's touch and go on a federal school aid law. The outcome is still highly uncertain, but no matter which way it goes, this year has seen, at the least, substantial steps taken toward federal acceptance of responsibility for some direct financial support of public education.

The legislative situation: It is up to a House-Senate conference committee to see whether differences in the two adopted versions can be compromised successfully. The House bill provides $1.3-billion in four years, for construction only. The Senate's bill would allot $1.8-billion in two years, for either construction or teacher pay.

Two provisions have to go out, if there is to be a law. One is the authority to use federal aid for teacher salaries. Eisenhower simply will not accept this. The other is the so-called Powell amendment in the House bill, which would deny federal aid for construction of any school that would be racially segregated. Southerners in the Senate, by the mere threat of filibuster, can force out this amendment—or else kill the bill.

The principle of federal aid unquestionably has gained immensely in popularity. This was the first time in three tries that a general school aid bill won House passage.

The next veto fight between Eisenhower and Congress, which was supposed to have been on school aid, may come instead over a federal pay increase bill. The Administration has pulled all the stops in opposition, but Democrats are intent on voting $810-million a year in raises for 1.7-million government Civil Service and postal workers. The current reckoning is that passage will occur in the next two weeks.

—•—

An important, late-blooming tax bill has been introduced with bipartisan support. The measure, by Republican Sen. Prescott Bush and Democratic Rep. Emilio Q. Daddario—both from Connecticut—would limit state rights to impose use taxes on transactions in interstate commerce.

The aim is to upset a Supreme Court decision, in the so-called Scripto case last March, which makes many firms liable for collection and payment of use taxes, even in states where they sell only through independent brokers.

The House Judiciary and Senate Finance Committees plan, during the coming Congressional recess, to study state taxation of income from interstate commerce. It is probable that their inquiry will be broadened.

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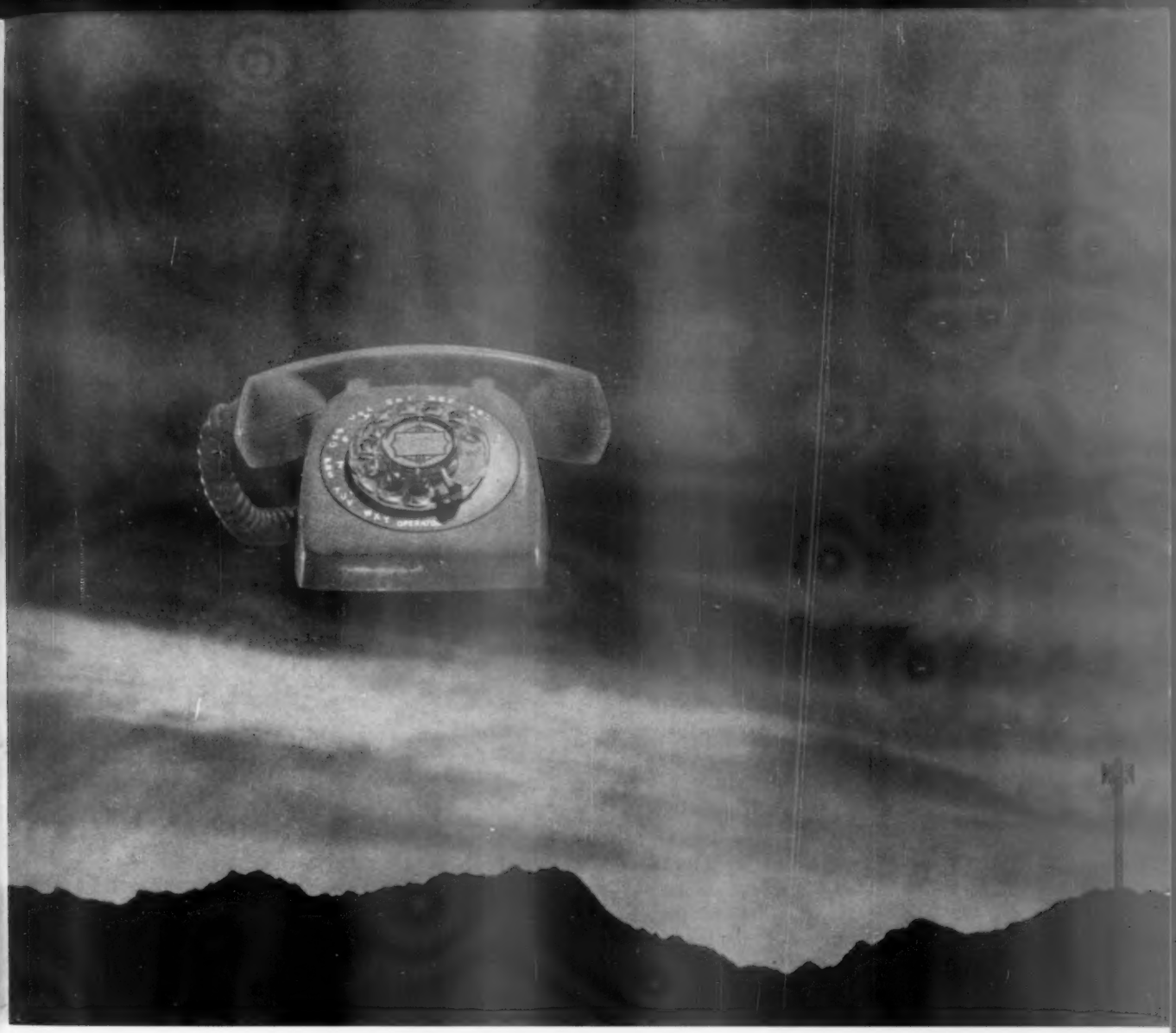

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Supermarkets today haven't anybody much left to fight except each other.

Not Much More Room To Grow

Supermarketers fear they've reached their natural growth limits. Stores may get less super or more generalized.

Supermarketing—the retailing revolution that has transformed the food business—has reached a slowdown. It can look back on the fabulous '50s as the decade in which it shot from around 40% to around 70% of U.S. grocery sales. But so well has the revolution succeeded that supermarkets today haven't anybody much left to fight except each other.

Supermarkets may increase their share of grocery store sales another three or four percentage points in the next decade. But that looks like the absolute limit. Their dwindling competitors—the delicatessens, the "Mom and Pop" stores—will probably make a firm stand at the point of retaining about a quarter of the grocery store business. These small competitors can fill in the chinks between the larger supers, offering greater convenience of location, longer hours, and more services such as credit and delivery.

• **Diminishing Return**—Supermarkets can assure some expansion from just holding their present share of market. Total grocery store sales are running at an annual rate of about $54-billion; by 1970 they should be close to $90-billion according to industry magazine Progressive Grocer. But without the added kick from rapidly increasing their share of a growing market, the supers may be running into a peck of problems:

• Competition has become mostly a matter of super versus super—and it can be plenty rough. Trading areas have shrunk rapidly. In just two years, Super Market Institute reports, the potential number of people served by each new super has dropped from 13,300 to 7,300. Pres. Joseph Seitz of Colonial Stores, Inc. (11th largest chain) voices a common complaint: "The way stores have been located in past years has been pure insanity on the part of chains."

• Most of the chains have cut back considerably from their peak rates of new store building. The stores they are building are smaller, with lower sales volumes. Even so, SMI figures betray some overoptimism. Last year, 43% of the new stores ran more than 10% under their sales estimates.

• Securities analysts have been demoting the supermarket stocks from the growth category. In its yearend review of the field, Merrill Lynch expresses a prevalent opinion: "There appear to be some trends in narrowing of operating margins and lagging year-to-year sales which can be attributed only to the inherent problems of the industry—notably overexpansion in certain areas and inability to control rising operating costs."

• These rising operating costs have pinched profit margins. Profit margins went down for five and up for only two of the 11 food chains on BUSINESS WEEK's tabulation of the 20 biggest retailers of 1959 (BW—Apr.23'60,p43). And food chains work on paper-thin profit margins of between 1% and 2%.

• Markups—which reflect a retailer's efficiency—have crept up from a 1950 low of 17% to a current 20%. Progressive Grocer sees them rising further to 22% by 1965. It blames a leveling-off in labor efficiency.

I. Growth Story

These factors, all pointing to a slowdown in the so far spectacular growth story on supermarketing, can have implications stretching far beyond the food field. The discount era merely marked the extension to general merchandise of the two basic innovations of supermarketing—self-service and profit-thin unit pricing.

Supermarketing swept through food retailing in the wake of the Depression. It overturned an industry characterized by fairly high markups and by a multiplicity of small stores with relatively little competition among them.

The first supers were set up by independents (and dubbed "animal markets" by the disturbed chains). They set up shop in shabby locations, slashed prices and services to match. Customers had to pick their merchandise out of cartons strewn around the floors—but they paid a lot less for it when they got to the checkout counters.

• **Joining 'Em**—In the late 1930s, the chains recognized this revolution for what it was, and they started converting their own stores to supermarkets. World War II froze the situation but, once the war was over, supermarketing took

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off on a seemingly endless growth spree.

The spread of population to the suburbs offered perfect growth conditions for the supers. It made shopping by auto more sensible and outmoded the delivery system that had been one of the main advantages of the older independent grocery store. Shopping by auto meant the supers could extend their trading areas. And they could offer wider selections and move into new areas of merchandise.

According to the Federal Trade Commission, the typical grocery store of the 1920s measured 800 sq. ft. In 1949, the typical new super ran to 9,000 sq. ft. In 1957, SMI says the average new super hit a record 22,000 sq. ft.

While the first supers sold mainly dry groceries, the postwar supers sold virtually every item in the family market basket, and many non-foods as well.

• **Effect on Chains**—The supermarket furnished the chains with the ideal device for increasing their concentration in the grocery field. The chains came out of the war committed to supermarketing, but their stores were inadequate; they averaged around 6,000 sq. ft. Practically all of these prewar stores have now been closed, sold, or replaced.

Last week, FTC released the first report on a long inquiry into the economics of food marketing—a 338-page tome reporting on concentration and integration in retailing. It shows how well the supermarket has furthered the expansion of chains. Between 1948 and 1958, the chains—defined as companies owning 11 or more stores—increased their share of grocery store sales from 34.5% to 43%. Their dollar sales went from $7.8-billion to $19.1-billion.

• **Counter Moves**—As another consequence of chain expansion, the unaffiliated food wholesaler has become a minor factor in food distribution. The chains have been extending their systems of central warehouses, supplied directly by food processors, to almost all merchandise (BW—Nov.14'59,p108).

These moves by the chains have forced the independent store operators and the wholesalers to band together. These little-publicized counter-movements have taken two forms: retailer-owned cooperatives and wholesaler-sponsored voluntary groups. Growth rates of these associations of supermarkets have been impressive, too. In 1948-58, their shares of grocery stores sales increased from 10% to 17% for the co-ops, and from 16% to 20% for the voluntaries.

In the co-ops, supermarkets associate to benefit by common service or management; in the voluntaries, the wholesaler provides these services and functions for his customer stores. The tendency has been for these associations of independents to become quasi-chains.

• **Uncle Sam's View**—The FTC report suggests that concentration has gone far enough in the food field. It is noteworthy that the last FTC investigation of this kind—in the 1930s—was followed by the Robinson-Patman Act. And the House of Representatives last year ran a long investigation of concentration in the food field.

Antitrust actions are in process against Kroger and National Tea, covering acquisitions that have significantly enlarged these big chains. Despite the suit, Kroger has moved to acquire a 10-store chain in Washington, D. C. But the consensus is that the government will not be able to force divestiture of previously acquired stores, though it will frown on most acquisitions in the future.

II. Where Next?

The industry as a whole has one overriding question staring it in the face: Can supermarketing be pushed beyond its "natural" limits as a form of retailing?

Almost everyone in the industry will agree that it has come close to its natural limits in its present form. But few will admit that these limits are immovable. Variations are being tried to make supermarkets bigger, more mechanized, less mechanized, smaller—to the point of raising the question of when a supermarket ceases to be a supermarket and becomes something else such as, on the one hand, a department store or, on the other hand, a small neighborhood grocery.

Conservatives find fault with most of these variations, and some of the experiments will doubtless turn out to be freakish and unprofitable. But these are some of the new forms that supermarketing is taking:

Vertical integration—extension of control by the supermarkets back through the various steps in food processing and distribution.

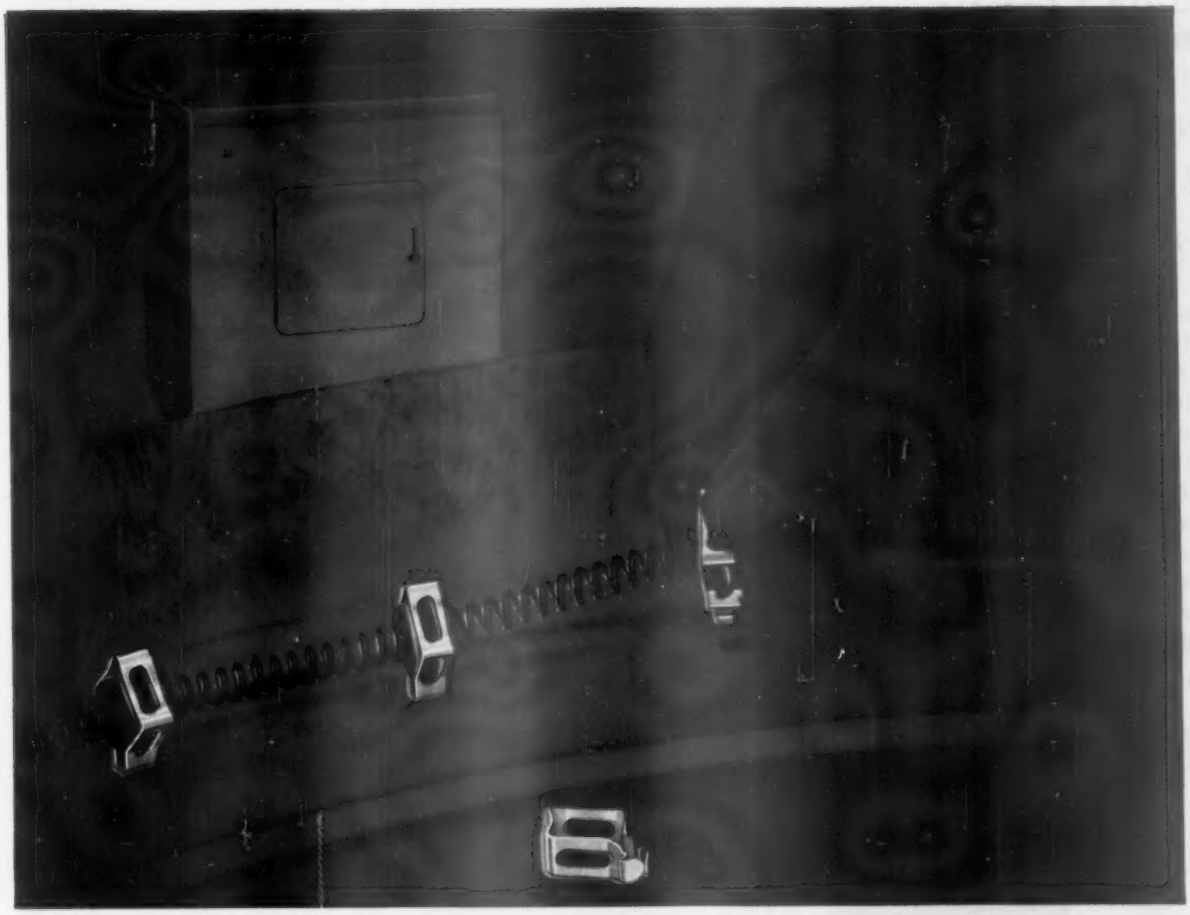
General retailing—expansion into non-food lines to capitalize on the traffic provided by food shoppers.

Humanized supermarketing—an attempt to attract business from the remaining independents by personalizing the supermarkets.

Miniaturizing—an attempt to divert business from the "convenience" food stores by shrinking supermarkets down to their size and adopting some of their features.

Automation—improving efficiency and profit margins by streamlining and mechanizing existing operations.

• **Controlling Brands**—Vertical integration probably won't come about through the supers' taking over food processing to any great degree. FTC finds that the great bulk of the supers' supplies come from independent processors, perhaps because the governmen



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has reacted vigorously to takeovers in this field.

But manufacturing the items may not be so important as controlling their branding. In private branding, the retailer gets the same goods that the processor packs under his own labels—but without the advertising expense. The chains then price the goods to sell under the advertised brands and still reap a better unit profit.

It looks as if private branding is on the upswing. A. C. Nielsen Co. recently surveyed 39 product categories and found that in 1953-58 private brands had increased their share of chain store sales only from 24.1% in 1953 to 25.6% in 1958. But the design firm of Lippincott & Margulies found that the percentages of private-brand sales are running much higher in the newer types of foods, where the chains have been able to establish their own brands before consumer advertising could build a strong demand for processors' brands.

• **Non-Food Lines**—General retailing could be a logical development of the supers' cautious forays into sale of non-foods. Currently, about 5% of a super's sales come from these items—cosmetics, proprietary drugs, records, tableware—and most supermarket executives agree with A&P Pres. Ralph Burger in predicting that's where they'll level off. The consensus holds that the current array enjoy the fastest turnover of any non-foods a supermarket might carry and are best suited to self-service.

There are other limiting factors. ACF-Wrigley cites the number of supers that settle in shopping centers—where variety store and department store tenants would rise in arms against supermarket encroachments on their traditional lines of merchandise. Winn-Dixie observes that carrying more non-foods would require the construction of larger and fewer stores, thus widening the gaps between supers and making way for more competition from the Mom and Pop type of store.

But some big chains have forged deep into non-foods. Food Fair sets 10% as the top for non-foods; Weingarten's Texas stores carry about 25%. Ohio-based Century Food Markets has some 20 stores that offer a 50-50 mix of foods and non-foods. And Grand Union this year will add seven more Grandways to its string of 13 combination foodstore-discount houses (BW—Apr.4 '59,p92).

• **Arguments**—For the scoffers, Pres. Thomas Butler states that Grand Union's return on investment in non-foods is as good as that in food, or even better. But the Grandway approach has stirred up endless arguments among the savants of retailing:

Does the housewife want the convenience of one-shop shopping—or is a trip for department store merchandise a lark that she wants to separate from the drudgery of getting the groceries? Does she value the reputation, personal attention, service on repairs, and adjustments that are part of a department store, or will she forego these in favor of convenience and lower prices?

• **Opposing Trends**—While most chains wait to see what happens to Grand Union, some general merchandise retailers—drugstores, discount houses, even a department store chain—have been trying the approach from the other end by setting up food stores in their buildings.

Designer Raymond Loewy thinks the future of the supermarket lies in more general merchandise. The way to get there, he says, is by improving the supermarket's image as a food store. He urges more personalized service and more consumer information—for instance, on the mysteries of the lesser-known cuts of meat.

Designer Walter Margulies chides the supers for "in effect becoming real estate operators providing shelf space for fast turnover of national brands." Margulies thinks the supers can take over a lot of specialty store business, especially of the sort that tends to flourish around the nucleus of a supermarket, such as bakeries and florists.

• **Personal Touch**—Most chains are making strong efforts to individualize and personalize their stores.

Kroger gives its local store managers considerable autonomy to vary stock according to community food preferences and local events. Says Kroger: "If the American Legion is having a picnic, we want our manager to know about it and be ready with plenty of hot dogs, rolls, and mustard."

To some observers, these attempts indicate that the supermarket revolution has come full circle to the human touch of the Mom-and-Pop stores. They also could mean higher food prices, in payment for special services.

• **Unsuper Supers**—In another full circle, the supers have been trying various kinds of midget marketing. Several chains have experimented with bantam or superette units to fill in the chinks between their regular supers. Typically running about 2,500 sq. ft., these stores offer only the fastest-moving items.

Chains agree that they must set higher gross margins to get equivalent profit returns from these less efficient units. Jewel Tea recently closed down its six experimental bantams, saying that the higher margins build up too much customer resistance. But Safeway said last week that it will try out bantams.

Some chains feel that the competitive spot for bantams is better filled by specialists in this form of operation. Such companies are springing up. U Tote M,

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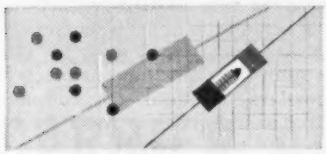

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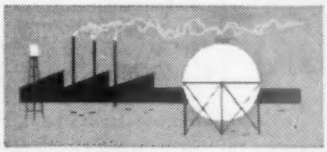
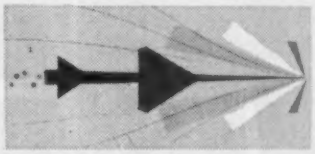
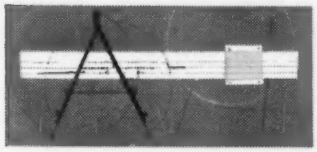


CAPITAL EQUIPMENT





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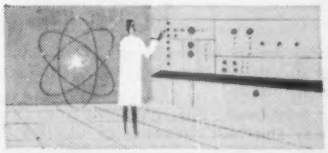

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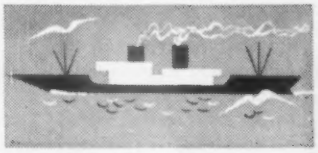

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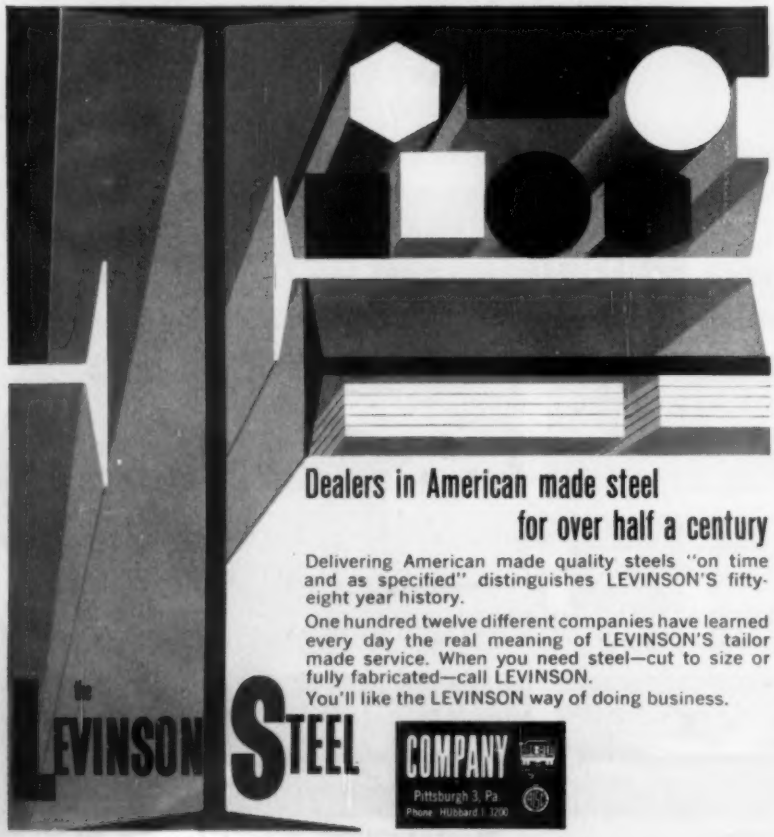

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Texas bantam chain, now has 70 stores. Convenient Food Marts has opened five stores in Chicago and has five more under construction. These are drive-in stores, open from 7 a.m. to 12 midnight, every day of the year.

• **Automatic Checkout**—In making their operations more efficient, supermarkets look for a significant breakthrough in automation of the checkout counters. The crowded checkouts are a major source of customer annoyance. They require a great deal of labor, labor that can't be detached for other duties during lulls. Besides, the chains have found they lose a lot of money on errors and in checkout clerks undercharging their friends and relatives.

National Cash Register and Sylvania are among the companies that are developing automated checkouts, but full commercial application looks to be three to five years in the future. These units will probably operate with optical scanners picking up prices from the customers' selections. The prices will be imprinted in specially sensitized ink, and the system will work much like check-processing equipment.

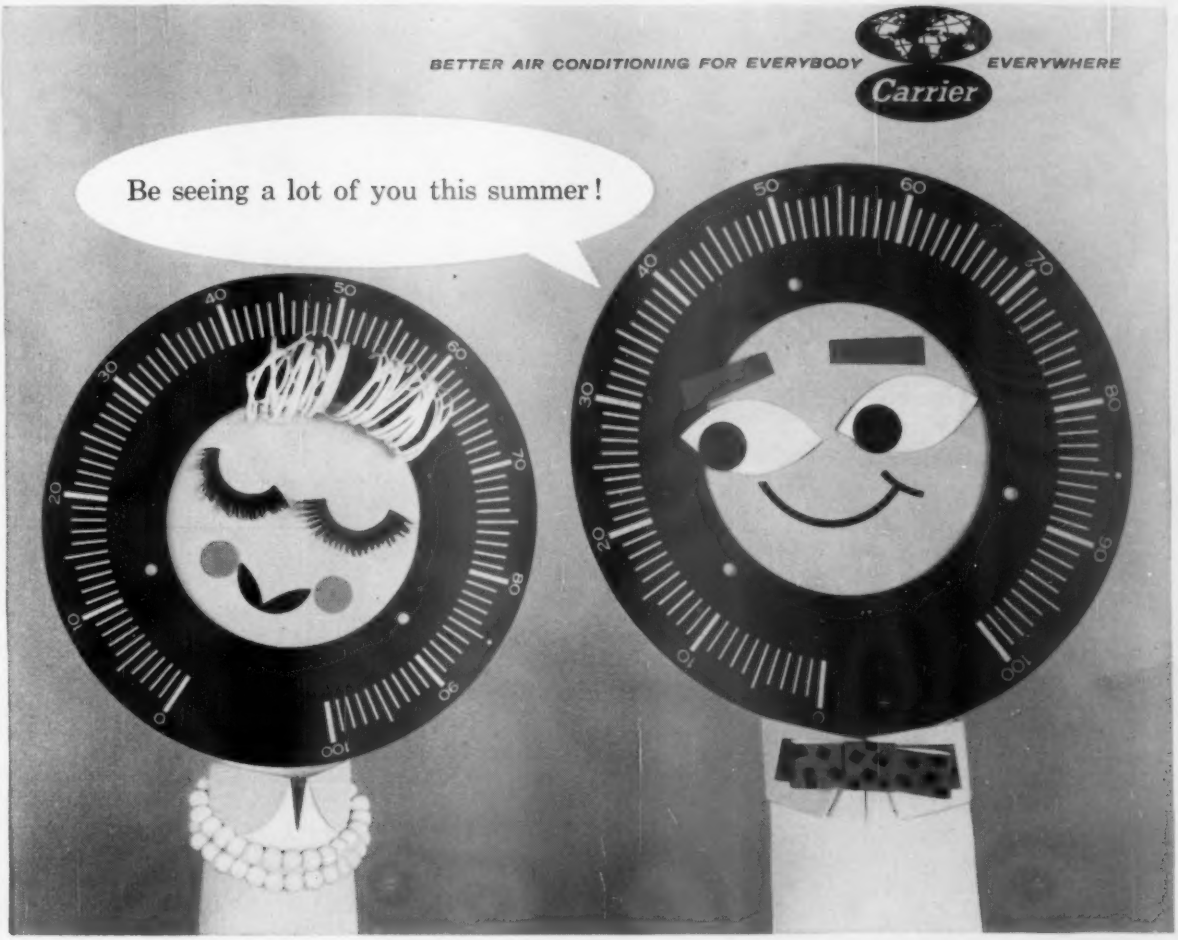
Some enthusiasts have envisioned totally automated stores. Daitch Shopwell has exhibited models of such a store where customers ride on moving walks past merchandise. As items strike their fancy, they insert a coded tag in a slot below each item. At the end of the shopping tour, their choices are conveyed to the automated checkout from a behind-the-scenes storeroom.

But Kroger's Pres. Joseph B. Hall warns against too much mechanizing of supermarkets. "I think the customer still likes to walk up and pinch the tomatoes," he says.

• **Lopsided Week**—Rearranging the customer's shopping habits would improve supermarket efficiency. Says Colonial Stores' Pres. Seitz: "Unfortunately, the average food store has an uneven traffic load. Millions of dollars have been spent trying to get people to shop Monday, Tuesday, and Wednesday. But 75% of our business is still done on Thursday, Friday, and Saturday."

Offering credit might smooth out this pattern, since supermarketing is a cash business and most customers get paid at the end of the week. But supers are leery of adding the family food expenditures to an already loaded structure of consumer debt.

Cleveland's Giunta Supermarkets claims it has been able to reverse the weekend-weighted buying pattern by stressing perishables, whenever possible processed on the premises. The company points out that attractive perishables, such as fresh fish and baked goods, induce the customer to return every day or two rather than loading up only once at the end of the week. END



CARRIER AIR CONDITIONING AT DENSAL PAYS FOR ITSELF IN LESS THAN A YEAR

Is the need for increased production a problem in your plant? Then two courses of action are open to you.

You can hire more workers and provide additional manufacturing space and equipment. Or increase the productivity of those already on your payroll with air conditioning.

The wisdom of the second course is daily becoming apparent to specialty manufacturers, almost without number. One of them is the Densal Manufacturing Corporation of West Springfield, Massachusetts—producer of metal-etched and lithographed instrument dials and name plates.

Business is good at Densal—so good that overtime is constantly required to keep pace with orders. But in hot weather, when 3 P.M. shutdowns were unavoidable, overtime was impossible. So management decided that worker productivity—not expansion—was the key to increased production.

The soundness of this decision has been more than demonstrated during the two years since a Carrier Heat Pump air conditioning system was installed. Production has increased 70% during July, August and September. Profits went up 83% in the same period. And the annual return on the investment has been enough to pay back the entire cost of the air conditioning system in less than a year.

Larger manufacturers, too, report that Carrier year-round air conditioning is delivering similar benefits. Significantly, such gains do not vary greatly as the result of geographical location or the type of products manufactured. The most important factor in determining the profitability of air conditioning is usually the density of workers in a given plant or plant area.

Where the number of square feet per worker is low, the return on an air conditioning investment will invariably be high. For this reason, the most densely populated departments should be air conditioned first in any program that calls for the installation of complete plant air conditioning.

There are other yardsticks, too—all described in the booklet, "Will factory air conditioning pay off for me?" Write for a copy. We are sure you will find it helpful. Carrier Corporation, Syracuse, New York. And in Canada: Carrier Engineering Ltd., Toronto.

JAPANESE color TV set will help appliance distributor Robert Sampson (second from left) build up his growing national sales.

A Distributor Imports—to Live

The maiden demonstration in the U.S. of a Japanese color TV set (picture) brought the expected flurry of questions: Will it sell? What will it do to U.S. competition? What next from Japan?

But a less obvious question lay just below the surface hurlyburly. The way this TV set got here reveals plainly some of the creaks and stresses in today's distribution system.

The occasion for the color set's debut was the Electronics Parts Distributors Show in Chicago two weeks ago. The set was bound to make a splash. So far, Japan has contented itself mainly with exporting small radios and inexpensive electronic parts.

• **Reactions**—The distributors who saw the model reacted with piqued curiosity and some skepticism. They were impressed for several reasons:

• Sampson Co., an old-line Chicago distributor, is handling the product. This fact lent the project an air of substantial investment and permanence.

• The set was manufactured by Hitachi, a top Japanese electronics manufacturer (sales about $380-million in its last fiscal year).

• The high degree of color resolution impressed even those distributors who can't see a possible market for the set. One distributor was heard to say, "The picture has the quality of a Disney film, and a black and white image equal to any other set."

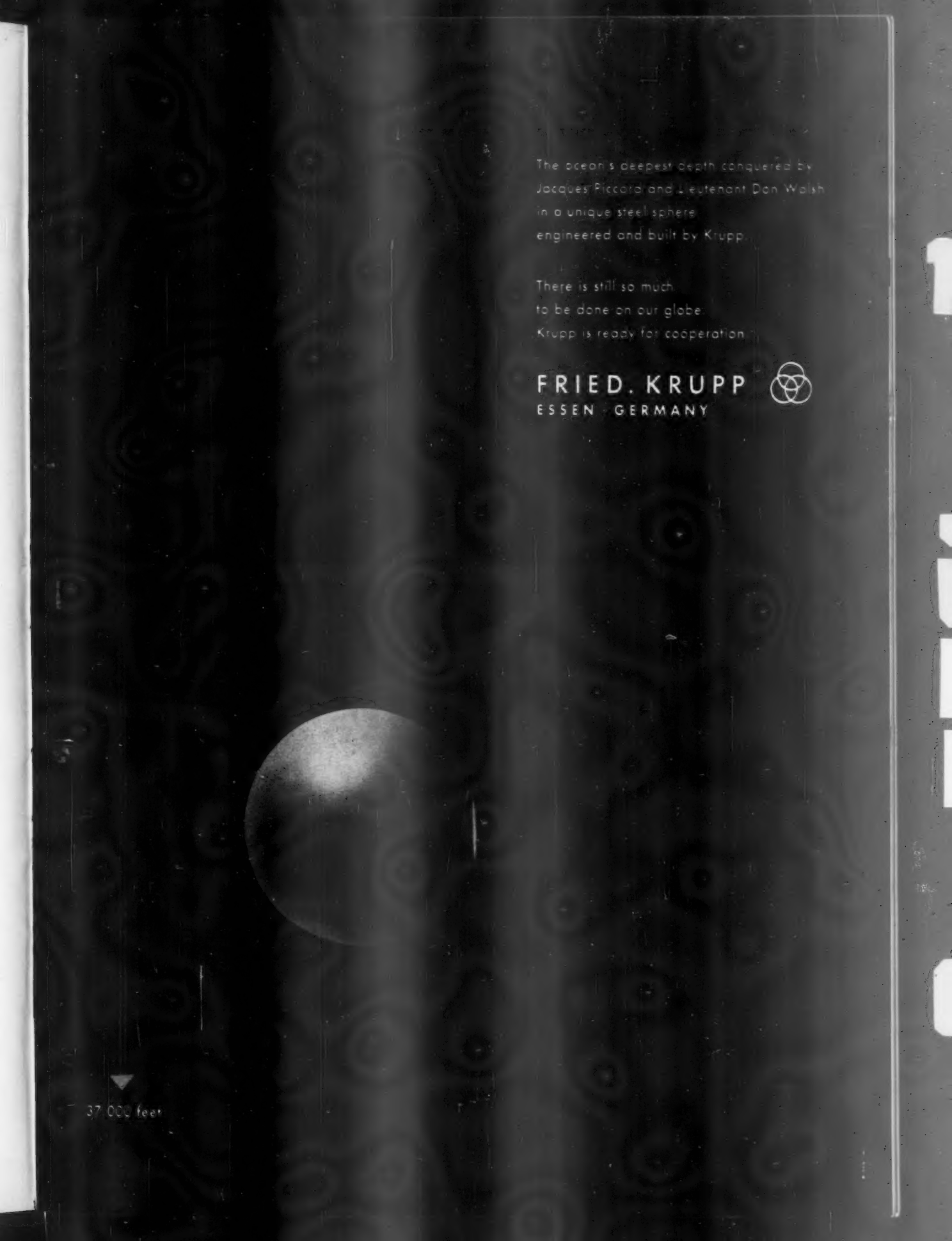
Nevertheless, Pres. Robert Sampson faces some problems to move his big new baby.

First is the price. Sol Kamin, a distributor in Providence, R. I., reflected the feeling of many when he said, "If you can't put a $299 tag on color, you'll never get a mass market, no matter who sells it." Admittedly, Sampson can't price the set too far below the $495 floor of the RCA color line. Just how far below, Sampson can't say. He merely claims the set was built as a high-end product, with no shortcuts in circuitry.

Second, and related problem, is size. As shown, the set is something of a monster—3 ft. 6 in. high, a yard wide, almost that deep; it weighs 135 lb. At that size, it's too much for U.S. homes, no matter what the price.

Sampson can get around much of the bulk and weight problem, though. Hitachi showed it in the cabinet it makes for sales in Japan. The chassis of the set is no longer than any other current color sets. Sampson will probably import the chassis, have his cabinetry and assembly done here. Freight costs alone came to $45 to haul the set from Japan to Chicago. Eliminating the cabinet would pare freight costs maybe 25%—enough to give Sampson a good start on a less elaborate cabinet.

Supply is still another question. Right now, Hitachi says it is making fewer than 100 sets a week for its domestic market. So Sampson is planning limited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MAKING THE BEST TODAY STILL BETTER TOMORROW

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distribution for its pilot operation, to key city distributors who offer color TV service.

Since substantial price cuts below U.S. levels don't seem to be in the cards, what does Sampson stand to gain by taking on Hitachi's TV?

To him, it represents a calculated gamble. Ironically, it's a gamble that grows out of distributive trends in the U.S., as he points out with some bitterness.

• **Factory Branches**—The independent distributor has had some steep hills to climb in recent years. Factory branches in major markets have squeezed them out of many lines. In fact, Sampson claims he is the only major independent distributor left in Chicago. But he has felt the squeeze, too. Within the last three or four years, his company lost franchises of several national brands for local distribution: Norge and Columbia Records went to factory branch distribution. He lost the Vornado brand when O. A. Sutton, which owned it, merged with Two Guys From Harrison. Sampson gave up Armstrong floor coverings because of multi-distributorship in the area.

To Sampson, becoming national rather than local appeared to be the course of survival. The easiest way to go national was to take on foreign lines.

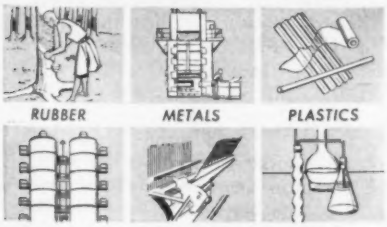
Three years ago he took the plunge. He got the exclusive franchise as U.S. importer of Hitachi consumer products, and with it, he says, a top line. One reason, Sampson feels, was that he agreed to market the products under the Hitachi name. Another is that he took on a broad line of Hitachi's wares: tubes, tape recorders, and a variety of transistor radios.

• **Spreading Out**—Then Sampson began to build up a national distribution for these products. In the three years, he has built a national sales organization of some 214 distributors. He found customers among regional distributors who, like himself, had lost some national brands to factory branches. Other takers were booming distributors of electronic parts, to broaden their lines.

National distribution still accounts for the smaller part of his business. Last year, his volume as local distributor for Gibson, Hamilton, and Tappan built-in ranges, plus a few smaller appliances, was double his volume of imported, nationally distributed products—even though sale of Hitachi radios ran to six figures, Sampson says. This year, he estimates national sales will account for half his total volume. (He doesn't talk figures, but his total sales for last year are estimated at around $30-million.)

The road to survival that led Sampson to Japan may lead him home again. "We may be able to announce shortly

THE SIX FIELDS OF FIRESTONE



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From design assistance to fabricating and finishing, your Firestone Tech-man is a mass-production specialist when it comes to metal products. Firestone is the world's largest producer, not only of stainless steel beverage tanks and barrels, but also of truck, bus and tractor wheels and rims, and a principal manufacturer of boat trailers. And products like Firestone's new Accu-Ride wheel prove Firestone research in metal forming is continuously making the best today still better tomorrow. In this first mass-produced precision wheel made for trucks and buses, Firestone has doubled the strength, lightened the weight and reduced the high-speed bounce and wobble that plagued the industry. Firestone has the production answers when it comes to forming, fabricating and finishing aluminum, too—with one of the industry's largest facilities for color-anodizing this widely used metal.

Whatever your field—whether it's rubber, metals, plastics, synthetics, textiles or chemicals—you'll find a Firestone Tech-man always on call and ready to answer your questions. Naturally, no obligation. Inquiries invited; write Firestone Technic-aid, Dept. 7A, Firestone Tire & Rubber Co., Akron, Ohio.

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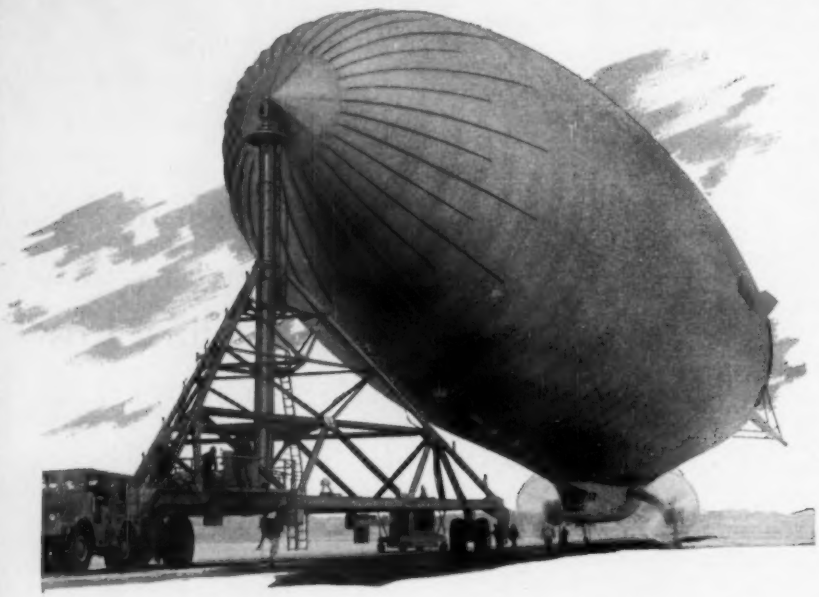

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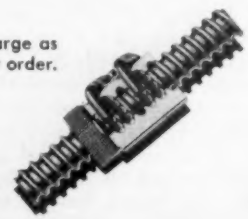
The Saginaw Screw may be able to improve *your* product's performance, give you greater power and maintenance savings, and lower your initial cost. Talk your actuation problem over with Saginaw's engineers. Just write or phone Saginaw Steering Gear Division, General Motors Corporation, Saginaw, Michigan—*world's largest producers of b/b screws and splines.*

Actuation To Fit Your Individual Requirements

Have been built as small as 3/16 in. B.C.D. and 3/4 in. long, as large as 6 in. B.C.D. and 40 ft. long. Larger sizes can be built to your order.



Saginaw

WORLD'S MOST EFFICIENT ACTUATION DEVICE

ball bearing Screw

national distribution of two domestic lines," he hints, "one a household appliance, and the other an electronic specialty. Neither would have come to us had we not made a success of national distribution with the imports."

• **Import Perils**—Handling imports holds some special dangers, though. Delmonico International, of New York, lost its franchise from Sony, recently, when Sony set up its own distribution here. Delmonico has now taken on Victor Co. of Japan, which promises delivery of color sets before December. So, if Sampson succeeds in selling Hitachi color, he faces a possibility that he may have his franchise lifted in favor of a factory outlet, and competition from other Japanese manufacturers.

Whether—and how soon—all this portends more Japanese exports of appliances and electrical housewares is the burning question. A recent report in Electrical Merchandising Week, a McGraw-Hill publication, found little prospect of a major housewares invasion right now. In appliances, rugged competition sets the market price, and sets it so low that there's little leeway for an imported product to squeeze in. The magazine points out that Japanese production costs are not so low as you might think. Partly because manufacturers have their sights set on the U.S. market, they are shooting for quality, rather than low-end goods. When you add on import duties and freight, its harder to achieve low prices.

This is particularly a factor in large, costly items. That's a major reason for skepticism about the Hitachi color set.

• **Warnings**—Nevertheless, Electrical Merchandising Week's study is studded with caveats. Don't underrate the Japanese, its sources echoed over and over.

According to Electronics, a McGraw-Hill publication, Japanese factory sales of consumer electronics products last year came to $511.6-million, double 1958's $252.1-million. The publication quotes Finance Ministry statistics to show that total value of electronic exports to the U.S. (f.o.b. Japan) was $75.6-million, more than triple 1958.

Sampson won't talk about relative costs to him of his imported merchandise. Sampson knows the importance of price as well as anyone. For import lines to compete with domestic products, he says, the products must either be demonstrably better for the same price, or of equivalent quality at a price lower enough to induce sales.

At the Chicago show, it looked as though distributors who have done well with other Hitachi products would probably gamble on the color set along with Sampson. As one distributor put it, "We can charge 25% less for the Hitachi lines and still make the same dollar profit." The key question is "What price the color TV set?" END

Are your products completely on their own, once they get up there on the shelf?

And do they clearly say "Stop, look and take-me-with-you"?

Bemis flexible packaging is helping to sell an amazing variety of products . . . sometimes by letting the product tell its own take-me-with-you story . . . sometimes by telling the story itself.

Take the recent beer experience. Advertising planted the intriguing idea: "For holiday entertaining . . . get a Party Pair of 6-paks." Then the Bemis-made package went to work in the store. Made it look like a lot of fun. Made it easy to pick a Party Pair. Made a lot of sales.

HOW TO GLAMORIZE EVEN A BURLAP PACKAGE (and, mister, that's tough): Print your "take-me-with-you" in Bemis' Brite-Lite* Inks. They'll almost light up the dark. They *will* light up your sales. *Trademark

BALLET SLIPPERS AN *IMPULSE* ITEM? Sure . . . when they're packaged like this. They tell their own story. The Bemis poly package amplifies it. And then doubles as a permanent shoe bag. Can *you* use a *flexible* packaging idea?

Bemis *Where flexible packaging ideas are born*

Product Development Section
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In Marketing

• • •

Montgomery Ward Ties Up With Loblaw's To Put Its Catalogue in Supermarkets

Another mail order chain—this time Montgomery Ward—has tied up with a food chain, Loblaw, Inc., in a move that puts catalogue order departments into supermarkets. National Tea and Aldens have had a similar tie for some time (BW—Mar.29'58,p96).

This is the first time that Montgomery Ward has moved beyond its own properties. It will start with catalogue outlets in five Loblaw supers in Buffalo, N. Y.

The deal provides Wards with outlets in an area where it has no retail stores and only limited catalogue stores. To Loblaw it means customer convenience and "true one-stop shopping." In effect, says Wards, Loblaw will increase its nonfood merchandise by more than 100,000 items.

• • •

Package Trip Through Europe Includes Round-Trip Flight Plus Volkswagen

Looking for something different in a tour, the Philadelphia-based Keystone Automobile Club has come up with a package that includes a 29-day auto trip through Europe, a round-trip airplane flight from New York to Paris, and a Volkswagen. Cost of all three is just $2,659.

Takers will pick up a brand new Volkswagen in Paris, drive it from there through France, Italy, Switzerland, and Germany. **Shipment of the car from Paris to Philadelphia and duty on it are included in the cost of the tour, as are meals, hotels, guides, and other necessities.**

Emil Rohner, head of the club's travel department, concedes the club will "make no fortune on the tour," and he is not joking. The Volkswagen, which sells in the U. S. for about $1,600, is only a few hundred dollars cheaper delivered in France. Airplane fares will run about $490. Keystone will take no more than 15 people on each of two tours scheduled for this summer.

The tours aren't limited to members, "but we would hope that nonmembers would be inclined to join the club after the trip," says Rohner.

• • •

Potential Customers Are Offered $5 To Test Drive, Rate an Imported Car

Competition from compact cars has inspired a Volvo distributor to new sales efforts.

Edward V. Klein's Auto Imports, Inc., distributor in 13 Western states, pays potential customers $5 for a five-minute test drive. **To earn his reward, any adult with a driver's license first drives another import or compact, then drives a Volvo, and fills out a simple questionnaire comparing the two cars.** When the company gets the questionnaire, filled out, it sends the $5.

In spite of some skepticism—people are suspicious of the deal—Auto Imports received over 800 questionnaires in the first two weeks of the campaign.

Currently, Klein is offering the deal through his 66 Southern California distributors.

• • •

University Sets Up Shopping Center To Augment Its Operating Budget

The University of Southern California is going into the shopping center business to augment its revenues. It plans to convert its Town and Country Village, made up of small specialty and food shops, into a super shopping center. **That way, USC hopes to earn more of its $22-million annual operating budget, of which only half comes from tuition.**

The 7.5-acre site is near the Miracle Mile section of Los Angeles. The property was given to the university some 20 years ago by Capt. G. Allan Hancock, one of the university's principal private donors. Tenants that have already signed include Newberry, Safeway, Sav-On Drugs, and Grayson-Robinson Stores.

USC, an independent university, will borrow $3-million from Equitable Life Assurance Society of the U. S. to build the center.

• • •

Court Upsets Ohio's New Fair Trade Law

Ohio's new "fair trade" law has been held unconstitutional by Hamilton County Common Pleas Judge Frank M. Gusweiler. In a suit filed by Helena Rubinstein, Inc., against Cinci Vitamin & Cosmetic Distributors, Inc., Gusweiler ruled that the Ohio legislature had unlawfully delegated police powers to manufacturers.

Two years ago the Ohio Supreme Court knocked out the state's fair trade law on the grounds that its nonsigner clause was unconstitutional. Last summer the legislature overrode Gov. Michael V. DiSalle's veto of a new law (BW—Aug.1'59,p44). **The new law deems that any distributor or retailer who accepts branded or trademarked goods has a contract with the manufacturer.** Advertising or a price tag is considered notification of a fair trade contract.

• • •

Marketing Briefs

S. Klein, big New York-based department store chain, is the latest target of the Federal Trade Commission. FTC charges the retailer with **fictitious pricing comparisons** in newspaper, radio, and TV ads that crossed state boundaries. Klein denies the charges. It adds that it does not advertise such merchandise on radio and TV, and that it can justify all claims.

The new Textile Fiber Identification Act (BW—Feb. 20'60,p84) is under fire from National Retail Merchants Assn. and eight textile and apparel associations. A committee has been formed to study the law with an eye to removing "the useless burden it has placed on both manufacturers and retailers."

SILICON NEWS from Dow Corning

Watchword: Reliability

PHOTO COURTESY ACF ELECTRONICS DIVISION
ACF INDUSTRIES, INC.

Avion engineer "reflects" on Dow Corning silicon dome during test of infrared transmission characteristics. Avion's capability in infrared technology dates back to early research and development on the famous "Sidewinder" missile. Present interests and projects include airborne detection and tracking devices.

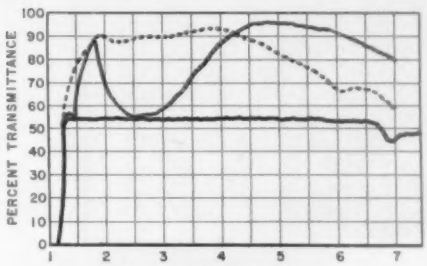
Silicon Optics Enhance Reliability and Versatility of Infrared Detection Systems

As new infrared guidance and surveillance systems take their "passive" positions in our defense, one major design challenge is to guarantee optimum performance of these vital devices. One way is to employ *silicon optics* . . . because, in addition to providing over 95% transmission, they offer a unique *combination of properties* that assure the highest degree of reliability and versatility.

Reliability of product really *begins* with reliability of *sources.* Under Dow Corning's stringent quality control program, each new silicon ingot is meticulously quality-checked for transmission rate . . . and a transmission curve goes right along with every silicon blank delivered.

Today, Dow Corning can make prompt shipment of optical silicon blanks up to 7 inches in diameter . . . in hollow domes, flat plates, prisms and other shapes to meet the most exacting specifications. Keeping pace with the new, fast-moving infrared industry, Dow Corning will apply latest techniques to larger sizes as the needs develop.

Free Brochure Available — plus latest data on optical silicon for infrared detection. Write today . . . your name will be kept on a special mailing list to receive all new bulletins on this subject. Please address your inquiry to Dept. 1606.



TRANSMISSION DATA COURTESY OPTICAL COATING LABORATORY, INC., SANTA ROSA, CALIFORNIA.

The black line indicates the percent of transmittance for silicon is relatively constant from 1.3 to 6.7 microns. Blue lines show how transmission is increased by coating. Single coating provides maximum transmission on a narrow band; several coatings, dotted blue line, give maximum transmission on a broad band.

Properties of Dow Corning Optical Silicon

Specific gravity	2.329 at 25 C
Melting point	1420 C
Hardness	7 Moh
	1150 Knoop
Thermal conductivity	0.39 cal (cm sec. C°)
Thermal expansion	4.15×10^{-6}/C°
Specific heat	0.168 at 25°C
Dielectric constant	13 at 9.37×10^{9} cps
Elastic modulus (Youngs)	19×10^{6} psi
Flexural strength	20,000 psi

HYPER-PURE SILICON DIVISION

Dow Corning CORPORATION

MIDLAND, MICHIGAN

ATLANTA BOSTON CHICAGO CLEVELAND DALLAS LOS ANGELES NEW YORK WASHINGTON, D.C.

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FOR THE POWER
OF THE ATOM

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75 years of leadership in the Wire and Cable industry

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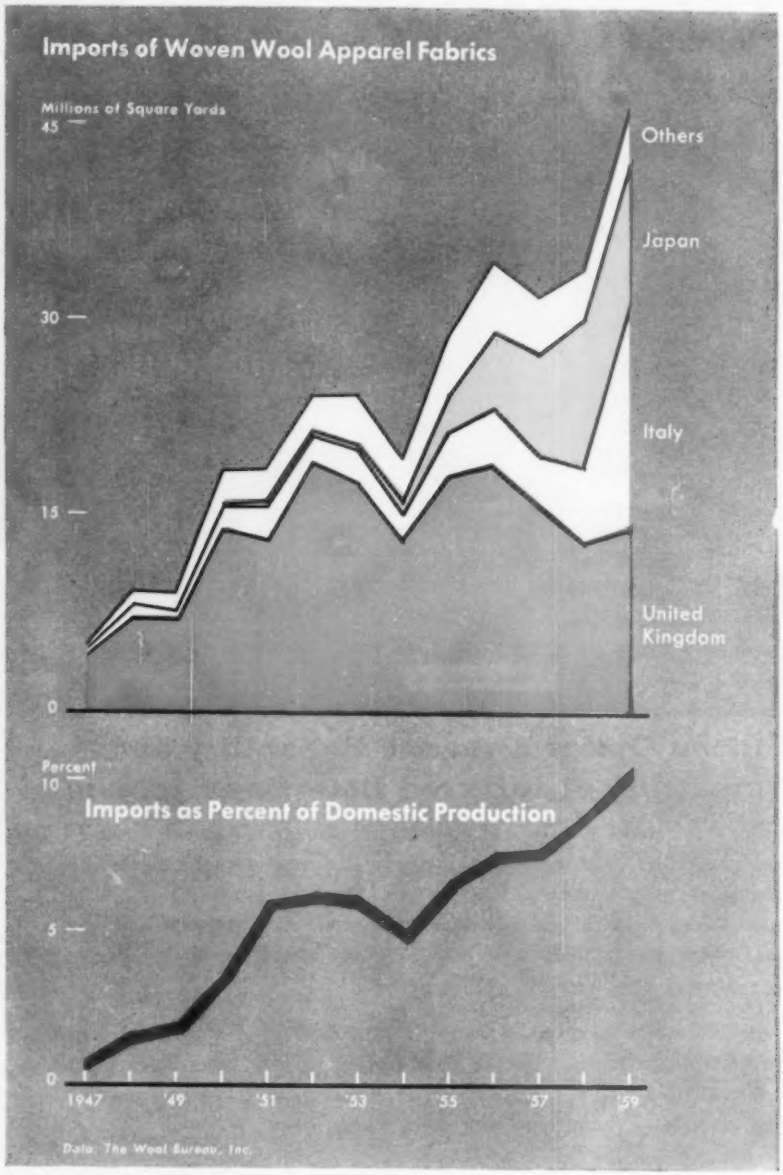
CHARTS OF THE WEEK



Italy Grabs the Lead

A Tuscan city in northern Italy a few miles from Florence enabled Italy, in a single year, to surge ahead of both the United Kingdom and Japan in volume of exports of wool apparel fabrics to the United States.

Until 1959, the United Kingdom held first place with a strong lead; its closest competition in U. S. markets came from Japan. As recently as 1958, U. K. shipped 12.9-million sq. yd. to the U. S.; Japan, 11.4-million; and Italy, only 5.9-million. But the following year, the score read this way: Italy, 17.1-million; U. K., 14.1-million; and Japan, 11.1-million. Italy's 1959 shipments were valued at $14.9-million, compared with less than $8-million a year earlier.

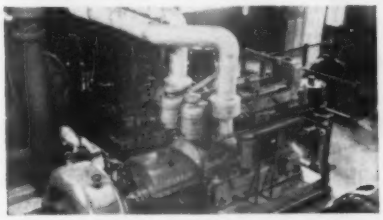
Last year the city of Prato, Italy, accounted for 80% of the volume of all Italian woolen exports to the U. S., and 60% of the value. Price is the principal reason for the success of Prato woolens in U. S. markets. Last year Italian woolen fabrics, priced as low as 70¢ per sq. yd., rolled through customs in great quantities. U. S. Tariff Commission figures show that almost 8.6-million sq. yd., more than half of the total imported from Italy, was valued at not

INTERESTED IN SHARPLY REDUCING YOUR AIR CONDITIONING BILL?

Summer natural gas rates for air conditioning use can be as much as 40% lower than winter rates. So, why not take advantage of this by using a Caterpillar Natural Gas Engine to drive your compressor directly? This power is not affected by peak demand or power factor.

These Cat Engines are a natural outgrowth of over 30 years of diesel and natural gas engine experience. They are heavy-duty engines with the highest compression ratio available in stock gaseous-fuel engines. They have many long life features such as low tension ignition, turbocharging compounded with aftercooling, aluminum crankshaft bearings, induction hardened crankshafts and valve rotators. These benefits are normally not available in other brands of natural gas engines.

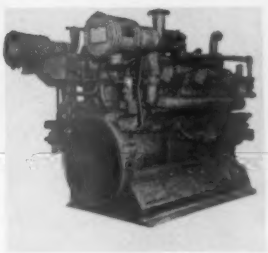
Air Conditioning



Sewage Disposal Plants

Industrial Usage

Pipeline Compressors



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NationaLease supplies everything but the driver at flexible, local-level costs. On-the-spot management provides highest efficiency; full service, one-invoice truckleasing—the LEASE-FOR-PROFIT way.

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Lease a new Chevrolet, or other fine truck, operate it as your own with no investment, no up-keep.

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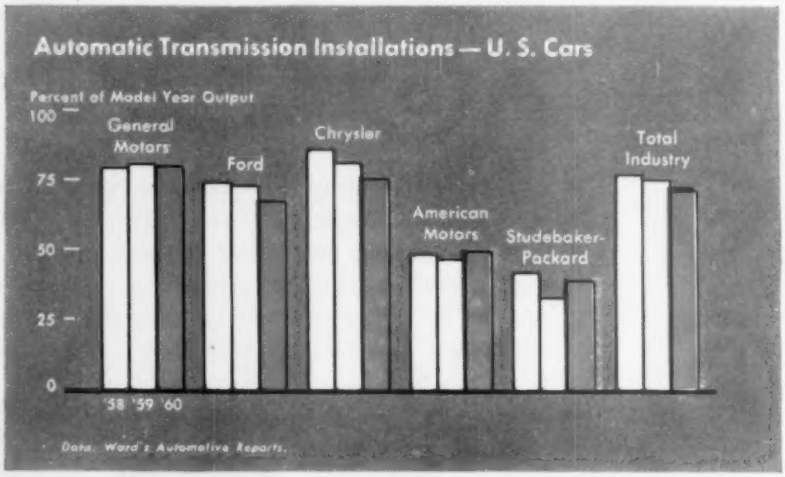
over $1.25. Almost 80% of this low-cost fabric was used in inexpensive women's apparel. The bulk of current Prato output is a very cheap grade woven from regenerated and waste woolens, largely from rags imported from the U.S. Prato claims to have the largest rag warehouse in the world.

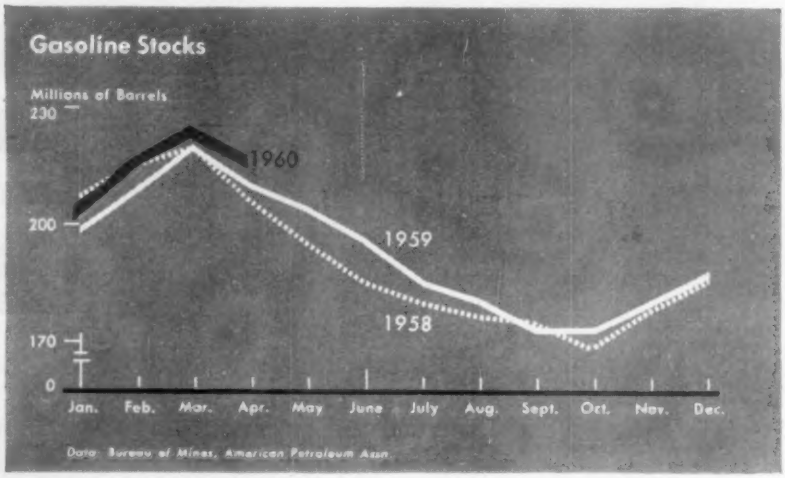


Autoists Revert to Old Habit

The do-it-yourself trend has hit the U.S. automobile market as more and more American car buyers are steering away from the automatic transmission and demanding the old-fashioned stick shift.

Installations of automatic transmission equipment on new American-made cars are down to 73% of the 1960 model year output through Mar. 31, 1960. The demand curve for the option has faded steadily from the 79.3% high for the industry's 1957 model year.

The switch to smaller cars, which includes increased usage of the six-cylinder engine, has pulled the average down. Economy has been the big advantage. The automatic equipment adds $150 to $200 to the purchase price; it reduces the gasoline mileage; and it is costly to repair. Some auto makers plan to share prices on the option next year.

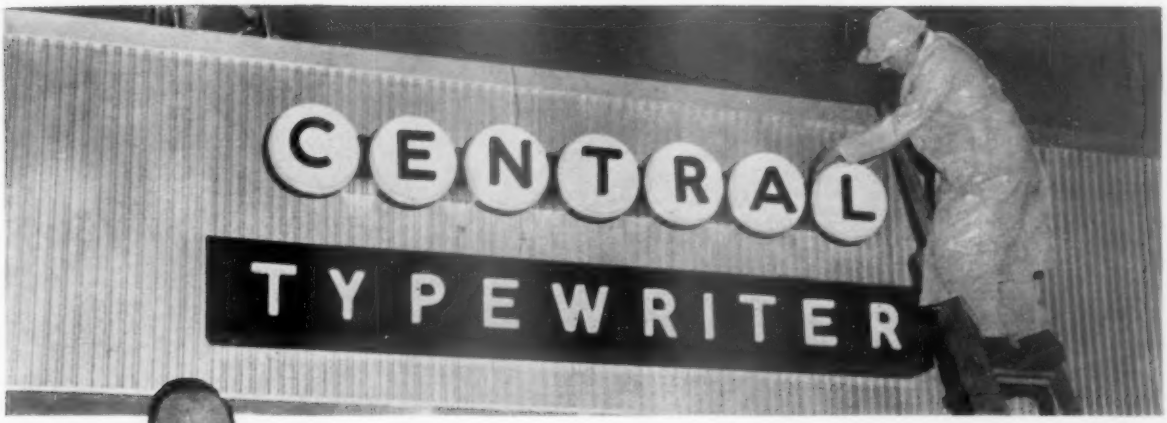


More Gasoline at the Refineries

Severe snowstorms in March, unseasonably cold weather and floods in April kept many motorists off the roads during those two months in some areas and pushed gasoline inventories to record highs for both months.

Despite continuing cutbacks in refinery output, gasoline stocks at the end of April were 4.2% higher than last year, and 6.3% higher than 1958.

The increasing number of smaller automobiles on the road also has cut into gasoline consumption and is worrying some U. S. oilmen.



"Kodapak Sheet— versatile as the alphabet..."

Says Al Wuttke, Baldwin, N.Y., plastic letter former, sign builder:
"For my money—in the outdoor sign business—Kodapak Sheet pays off."

Custom-made signs have a new alphabet (and economy), thanks to letters formed from Kodapak Sheet. Extruded Kodapak II is heat-formed over raised wooden ABC's, positioned in matrices according to sketch, then painted in a wide variety of colors.

The result: made-to-order signs of good dimensional stability, resistant to sun, snow, and smog without loss of sparkle.

Why Kodapak II? Because this versatile cellulose acetate butyrate sheet forms easily, weathers well, has good dimensional and chemical stability. These same properties make it an ideal choice for point-of-sale displays, striking packages—dozens of other applications which can help your business.

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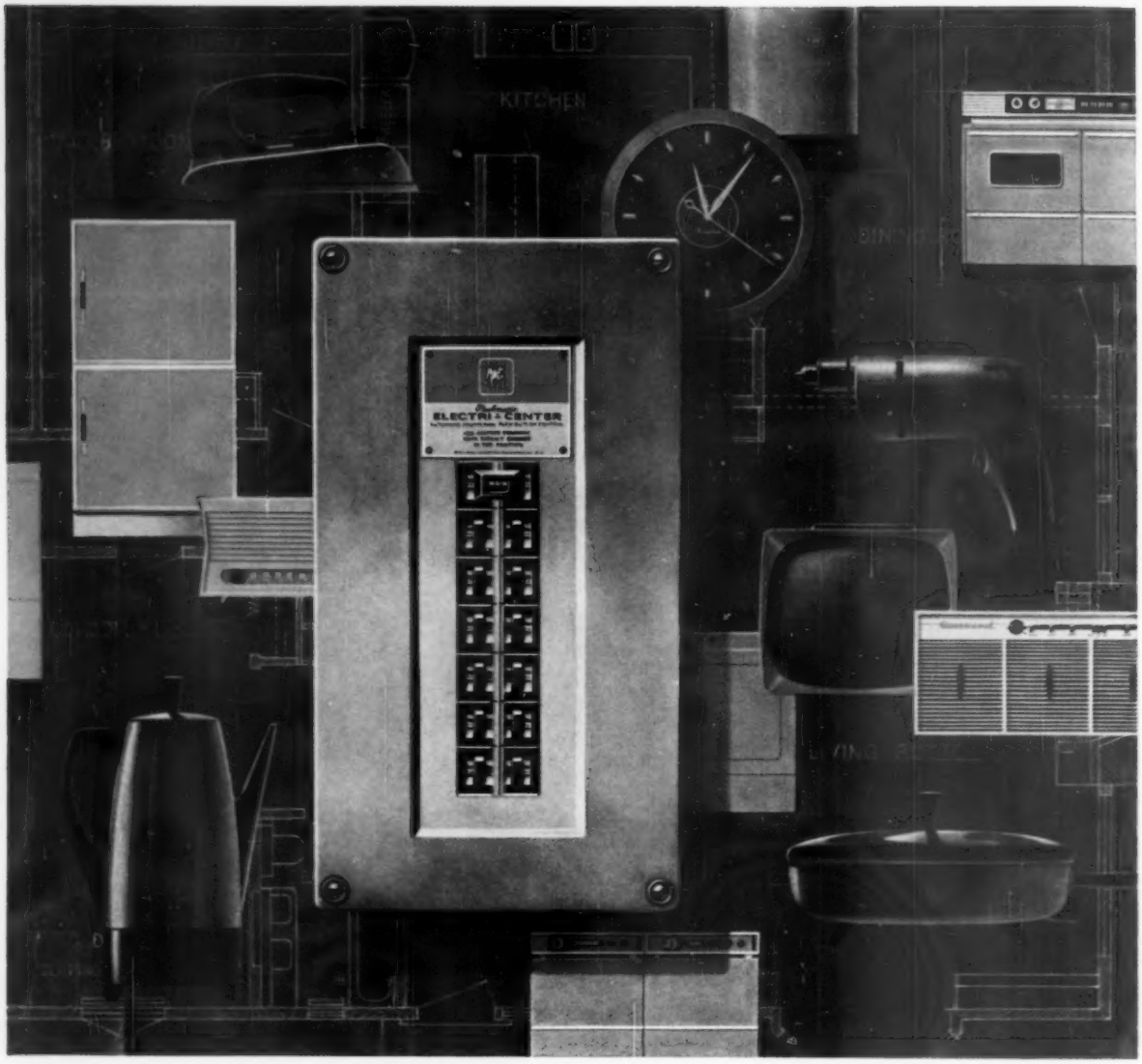

Artist Ned Seidler here paints the ingredients of modern living . . . a familiar variety of typical electrical appliances and the I-T-E BullDog ELECTRI-CENTER® that insures safer, more constant electric power.

PUSHBUTTON PROTECTION FOR MODERN LIVING

Electricity is a necessity in today's home . . . a vital part of modern living. When a short circuit or overload knocks out electric power, you want it back . . . right away. This is what the I-T-E BullDog ELECTRI-CENTER does. Just push a button on the attractive panelboard. The PUSHMATIC® circuit breaker brings your power back instantly. No delay. And no uncertainty. Because PUSHMATIC always gives just the right protection. Gone is the hazard of overheated wires. Today a growing army of electric-living Americans are grateful for BullDog ELECTRI-CENTER protection, love its convenience. The broad line of other I-T-E electrical equipment serves industrial, commercial and institutional users of electricity everywhere, plus all the electric power companies in the nation. Known for its extra quality and superior performance, I-T-E equipment costs no more. Do you need electrical equipment?

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I-T-E CIRCUIT BREAKER COMPANY

In Finance

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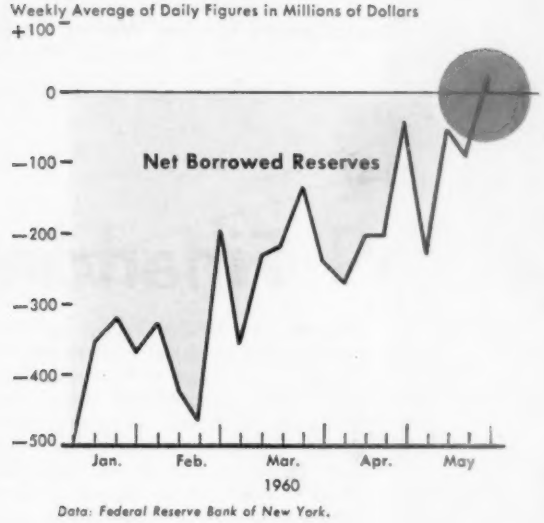
Is this the signal?



Data: Federal Reserve Bank of New York.

With Banks in "Free Reserve" Position, Fed Rediscount Rate Might Be Cut . . .

For the first time in over a year, the nation's commercial banks had more reserves available than they borrowed from the Federal Reserve, giving them a "free reserve" position. Ever since the fall of 1958, except for one week in February, 1959, banks have had a negative reserve position—their borrowings exceeded their reserves—which is an indication of monetary restraint. **Over the past few months, negative free reserves have been declining, a sign that the Fed was relaxing its credit reins** (BW—Mar.12'60,p23). **Now with a positive position, many monetary men think they see new easing moves on the way.**

The Fed, of course, is keeping mum about its intentions. But Fed officials have been freely stating that inflationary pressures are no longer making themselves felt, and that with excess productive capacity in industry, the chances of a renewal of price pressures are slim. The easy position that the banks now find themselves in may be a temporary one, but if it persists the chances are it will mean a reduction in the Federal Reserve's discount rate, which has been at 4% since September, 1959, followed by a cut in the lending rates of commercial banks.

. . . And Capital Demand Is Dropping Sharply

Apparent easing by the Fed isn't the only sign that a sea change may be coming in the money and capital markets. The Bankers Trust Co. predicted last week that over-all demand for capital would drop sharply from the $58.1-billion record set in 1959. Bankers Trust puts total capital demand at only $42.6-billion, a 27% drop from last year and the lowest since 1957.

MORE NEWS ABOUT FINANCE ON:

• P. 66—Jim Walter builds profit financing shell homes.

Chiefly responsible for the drop will be **the sharp shift in the position of the U. S. Treasury, which last year ran a $10.5-billion deficit and this year is expected to have a $2.7-billion surplus.** In addition, the bank predicts that housing starts will drop about 13% this year from a year ago—to 1,170,000—which will mean a slump of $1.6-billion in the funds going into mortgages.

Corporations, on the other hand, are expected to take up some of the slack with a "moderate," $500-million increase in borrowings.

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Murchisons Sell Half Their Shares In Publishing House for $9-Million

The Murchison family of Texas last week cashed in about half of one of its investments—its holdings in Holt, Rinehart & Winston, one of the largest publishers of textbooks. Clint W. Murchison, Sr., originally bought into Henry Holt & Co.—the largest of the three houses that merged last March to form HR&W—in 1945, on the theory that his sons, then at Yale, might want to go into publishing.

The Murchison boys never did go into the business directly, although they have kept a close watch on the investment. Holt's sales soared close to $23-million last year, a more than sevenfold increase in the last decade.

For the merged company, the increase is even greater, with the total sales running over $34-million in 1959 with net about $2.7-million. Moreover, after the sale—which gave the Murchisons $9-million—the family will still own 288,000 shares or about 13% of the stock, worth over $12-million at current market prices.

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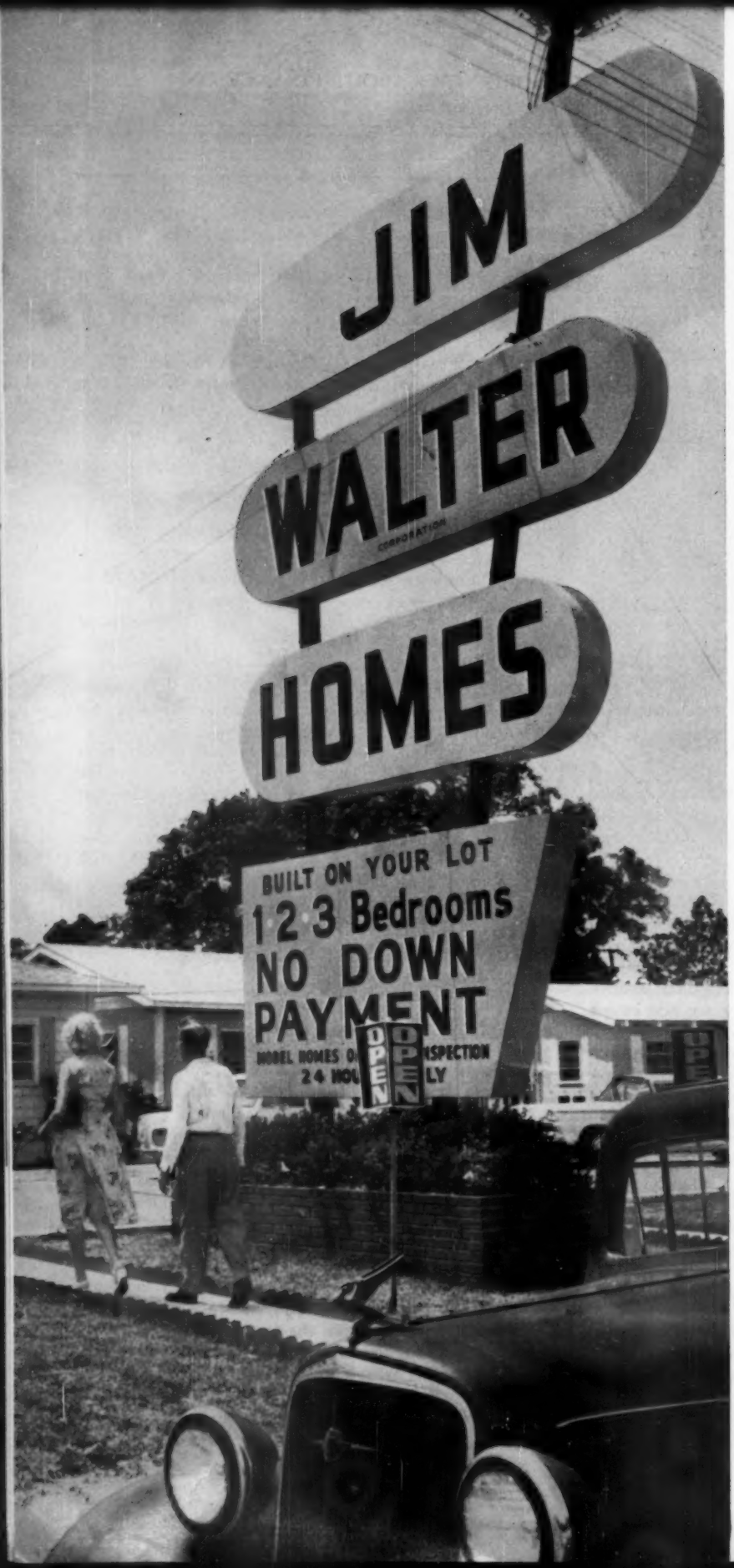
Mississippi River Fuel Corp. Bets $16.9-Million on Mopac's "A" Shares

Mississippi River Fuel Corp. has taken a longshot gamble on the fortunes of the Missouri Pacific RR—one that William G. Marbury, its chairman, is confident will pay off. Mississippi River Fuel currently has about $16.9-million in class "A" common shares, about 20% of the outstanding "A" shares. This runs to an average cost of $47 a share, compared with Mopac's present market price of $40.

But Marbury is not bothered by the paper loss, says "We're in this for the long term, not to get in and out quick." **He is counting on the fact that the "A" shares have to get $5 in dividends before the class "B" shareholders** including Alleghany Corp., which holds a little over 50% of the "B" stock—can get any. Marbury feels that Mopac's fortunes will improve, that his "A" shares—which with a $5 dividend would be yielding 10.6%—will be worth a good deal more.



Shell home models on display on main highways—at Tampa (left) and 86 other offices—pull in customers for Jim Walter Corp.

Financing

James W. Walter (cover and pictures), president of Jim Walter Corp. of Tampa, Fla., claims to be the world's largest shell home builder. This is no idle boast. Last year, his company sold almost 11,000 shell homes; this year, it is confident that it will sell over 14,000. While there are no accurate statistics on shell housing, Walter estimates total sales of all other shell home builders, who number well over 50, will be about equal to his own sales.

The shell home is a postwar development in the housing industry, one that started in Florida in 1946. Basically, the shell is a wood frame house completely finished on the outside, but unfinished—except for flooring, partition studding, and ceiling joists—on the inside. Selling in the $1,000 to $3,500 price range, the shell has found a fast-growing market among consumers in the $3,000 to $5,000 a year income brackets, a market that was largely neglected until the advent of the shell.

• **What Financing Built**—Walter, a

Most buyers work with hands . . .

Jim Walter contracts out building to independent crews, who take an average of two days to complete outside shell of house.

Builds the Profit in Shell Homes

drawling, affable 37, is one of the pioneers of the shell home. He started off in Tampa as a builder on a small scale, much like most of his present competitors. His position as the giant of the industry, with 87 branch offices throughout the South and Southwest, stems from the fact that Jim Walter Corp. did not stick to building alone. Walter also finances the shells that he builds; he's the only shell home builder who does his own financing.

Indeed, Walter has set up a formidable corporate structure for so simple a product as the shell. Jim Walter Corp., the parent company has a group of wholly owned subsidiaries:

- Mid-State Investment Corp. and Mid-State Homes, Inc., which provide mortgage financing for customers of Jim Walter Corp. shell homes.
- Best Insurors, Inc., which offers fire and extended coverage on shells.
- Southeastern Guaranteed Title & Insurance Co., which issues title insurance.
- Hillsboro Life Insurance Co., which underwrites credit life insurance on the mortgages held by the two Mid-State operations.
- Dixie Building Supplies, Inc., which purchases building materials in carload lots for shell home construction (most of the lumber needed, though, is bought at local yards).

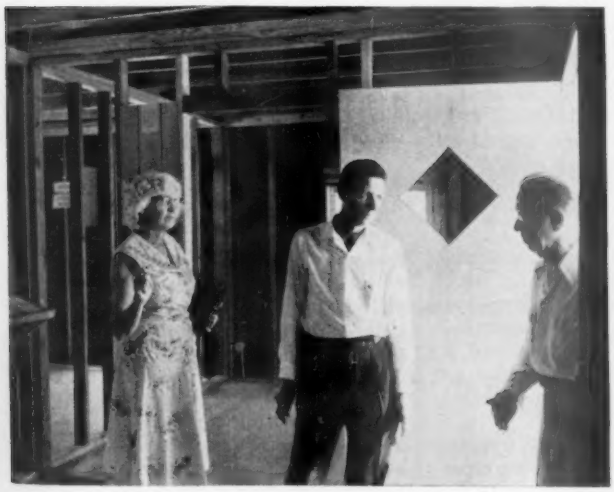
I. Many-Sided Shell

These varied activities make it difficult to put Jim Walter Corp. in one neat and well defined category. Its homebuilding activities give it some of the activities of a construction company, while its mortgage and insurance operations resemble those of a finance company. In addition, the company has two other holdings—ownership of a small loan firm, and majority control of the First National Bank in St. Petersburg. These are relatively new acquisitions that have nothing to do with the shell home business. But Walter thinks they fit into his picture because they are in related financial fields.

In essence, Jim Walter Corp. appears to be a merchandising firm with a concept, the shell home, that it has found profitable to finance. It does no actual building, contracting out the work to independent crews; so it has not suffered as yet the cyclical ups and downs that companies in the housing industry accept as a fact of life. And because the demand for its product has kept on growing, it has not been plagued as finance companies are when the public is displeased with new auto models.

• **Spectacular**—In fact, Jim Walter Corp. has been able to grow at a spectacular rate. Since 1955, when the company first went public, its gross receivables have jumped from under $2-million to over $60-million. Its earnings have also soared from a net of $390,000 in 1956 to $2.8-million—on sales of about $26-million—in 1959.

In this fiscal year, which ends Aug. 31, the company expects to have sales of



. . . Spend $2,000 to finish the bare interior

. . . Need no downpayment if they own a lot.

TEAM setup in management speeds Jim Walter Corp.'s growth to giant of shell home industry: Jim Walter (left), at top, takes care of finance; James O. Alston (center) looks after sales and production, and Arnold F. Saraw, internal management and bookkeeping.

about $34-million, net profits of over $3.5-million.

• **Winning the Bankers**—This profitable growth, though, has not been automatic. It has required a great deal of credit at a time when credit has been scarce and expensive. For Jim Walter faced not only the handicap of being a new company, but of being a new company in a brand-new industry. Walter had to overcome the skepticism and suspicion of bankers and other lenders, who regarded the plumbing-less, lightless shell as a shaky structure, and the shell home customer as a questionable risk.

The task of gaining acceptance from lenders has occupied most of Walter's time. Over the past five years, he has been on a continuous money-raising mission that has taken him to most of the nation's big banks. As he puts it, "I've got to know bankers intimately, from the troubles they are having with their kids to their latest scores on the golf course."

Today, Walter's campaigning has paid off. He no longer has to scratch for funds, for he has lines of credit of over $30-million with a blue ribbon roster of banks, including New York's Chase Manhattan, First National City, and Chemical Bank New York Trust; Chicago's Continental Illinois and First National; Cleveland's National City and the Cleveland Trust. This week, he reported that he had landed an entirely new line with Detroit's National Bank, which offered to extend $2-million on an unsecured basis.

• **Simplifying**—Obviously bankers now consider Jim Walter Corp. a good risk. And they think the company should be in even better shape in the future. For in his initial efforts to raise money, Walter established a bizarre and complicated capital structure. As one banker recalls, "the first time I asked for a look at his capitalization and balance sheet, I was scared away."

Walter plans to clear up this capitalization over the next 12 months. When he does, the company will still be geared for growth, but its capital structure will be much more orthodox —a condition that should appeal to both creditors and shareholders. In fact, once the crazy-quilt capital structure is simplified, Walter expects that his company's shares will be listed on the New York Stock Exchange (they are now selling over the counter at $30 a share).

II. Birth of the Shell

Jim Walter hit upon shell homes simply because, like many another World War II veteran with a new bride—a Wave he had met in the Navy —Walter was seeking a home of his own. His resources, however, were limited, so his attention was caught by an insert in a Tampa paper, offering homes at $995. Walter investigated, found himself intrigued with the shell home concept and its prospects, promptly formed a partnership with the advertiser, O. L. Davenport.

Their business did not immediately prosper. But Walter acquired a lot of building and merchandising knowhow. When, after two years, the partnership decided to break up, Walter stayed on in the business while Davenport got out (he now has a farm in Alabama, also operates a small motel).

• **Prime Need**—Although Walter started as a merchandiser builder, he recognized that he could never meet the demand for shell homes as long as he lacked credit. He found himself devoting an increasing amount of time to peddling shell home mortgage paper, at deep discounts, to prospective investors; so to oversee the building and sales end, he brought in Arnold F. Saraw, his brother-in-law, and James O. (Bud) Alston, a Navy sidekick.

Walter's problem has never been selling shell homes. Each time he moved into a new territory, customers flocked to buy. His product was a big improvement over the existing housing available, for in many cases shell home buyers came out of tar-papered shacks.

But while people were anxious to buy, financing them was a big problem. An unfinished shell home is not eligible for the mortgage loans available on the conventional finished home. At the same time, most shell home buyers do not have the cash to pay outright and cannot get a large loan.

• **Pattern**—Walter and other builders in the industry tried to solve the problem by adopting the pattern used in financing autos and appliances, though with the maturity of the loans extended somewhat. Those who do not have the full purchase price cash—and that means over 90% of shell home buyers—are required to own their own land; if the land is worth 5% of the shell home price, then no downpayment is necessary. The company takes over the deed and provides a mortgage running from 48 to 72 months, depending on the price of the shell; it charges a flat 6% interest rate per year for the length of the loan. (Buyers on credit also pay a flat $200 fee for processing, insurance, title coverage, and other expenses.)

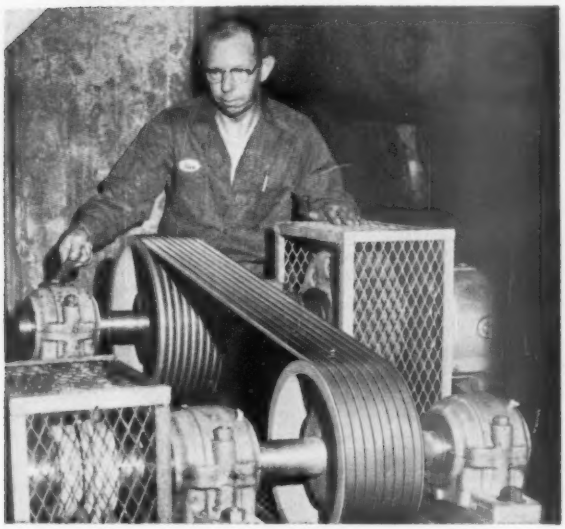
Thus, on a $2,500 shell home mortgage running for five years, the buyer will pay a total of $3,450, including $750 in interest charges. The monthly payment averages around $50. By constantly reemploying the money coming in, Jim Walter Corp. can earn more than 12% on the funds it borrows. Simply by buying money cheaper than it sells it, the company can make a profit.

• **Scratching for Money**—But getting money was no simple matter, despite the fact that shell mortgage paper has one distinct advantage over auto or appliance paper—as the buyer finishes the interior of his shell, it appreciates in value, enhancing the value of the loan. (On the average, a shell home owner spends about $2,500 in completing his house.) Walter also found that their relatively low incomes did not mean that buyers were poor risks; on the contrary, his defaults were exceedingly few. He explains that "our customers put their money and sweat into making a thoroughly finished home, and don't give up something they can own free and clear."

This record convinced Walter to

2 ways

Gates high capacity V-Belt Drives contribute to industry profits



ON EQUIPMENT OPERATING IN THE PLANT, Gates Super HC V-Belt Drives substantially lower maintenance costs—as on this centrifugal pump at Scott Paper Company's Detroit plant. This important pump was formerly driven by a special belt. In about 3 months, 6 of these special belts failed. In comparison, a Super HC Drive—capable of handling the 100-hp output for 24 hours a day under conditions of moisture and ambient temperature of 100° F.—has been operating for the past year with *no* down time and *no* replacement cost.

ON EQUIPMENT FOR SALE requiring multiple V-belt drives, Super HC V-Belts produce savings all down the line—as on these 8 x 6 Soft-Rubber-Lined Sand Pumps being readied for shipment in the final-assembly bay of Denver Equipment Company's Colorado Springs plant.

With Super HC V-Belt Drives, sheave dimensions can be reduced 30% to 50%, overall space up to 50% and drive weight by 20% and more. In addition, the cost of Super HC Drives is as much as 20% lower than drives previously used.

A little more than a year ago Gates introduced a new high capacity V-belt—a slimmer, tougher, more flexible V-belt with far greater capacity to transmit horsepower than conventional belts.

Because this revolutionary V-belt permits narrower sheaves, fewer belts, and closer center distances, hundreds of plants across the country have found Gates Super HC V-Belt Drives contribute to profits in 2 ways: through marked savings in drive costs on production machines *within* the plant and on powered equipment manufactured *for sale.*

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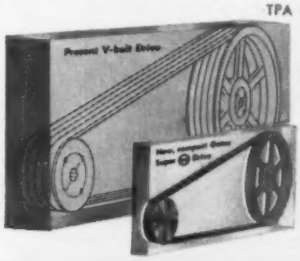

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concentrate on doing his own financing. To do so involved a big injection of permanent capital, for he could not expect the banks to advance funds in large amounts unless the company had a capital base.

But it was even tougher to get investors to put their money in Jim Walter Corp. than it was to sell them short-term mortgages. As he recalls, "We were scratching for money, but I had faith that somehow we would get it, so we went ahead and sold as many shells as we could. It was a case of putting our toe in the water and finding that we were in up to our necks."

III. Capital Complex

By 1955, Walter was still short of funds. But his situation interested a Tampa stock broker, Karl Kreher, one of many people sounded out by Walter. Kreher, who is now writing a philosophical treatise and fancies himself a financial wizard, was sold on the profit potential of the company. He worked out an ingenious capital structure, one aimed at expanding the capital base as well as the borrowing capital of the company, as the need for new funds arose.

Kreher's scheme, which he terms a "fractionated capital structure," offered investors a "portfolio" of different securities. For $3,994 they got this package:

- One $500 bond paying 9% a year and maturing in 2000.
- One $1,000 bond, paying 8%, maturing in 1985.
- One $1,000 convertible bond, paying 7%, and callable in 1961. On payment of an additional $1,000, these were convertible into one $1,000 9% bond and 100 shares of stock.
- 100 shares of common stock.
- 400 "A" warrants each of which, on payment of $40, were convertible into one $25 9% bond and three shares of common stock.
- 400 "B" warrants, which, on payment of $80, were convertible into one $50 9% bond and three shares of common.

In addition to all these securities, Kreher also included "A" warrant options, convertible into "A" warrants on payment of $1.10. But these were only available to Walter, Alston, and Saraw.

• Spasmodic Flow—Kreher's design was based on the premise that Jim Walter Corp. would generate profits at an extremely rapid rate. As he saw it, this would lead holders of the warrants to put up more cash for converting into dividend paying common stock and high yielding bonds.

In theory, this incentive type of financing was perfectly suited to a company like Jim Walter Corp., which had a rapid rate of growth and needed a constant flow of new money. But in practice, many warrant holders refused to convert because of the leverage the warrants provided. So while the prices of the securities increased by leaps and bounds, the conversion of warrants, which was supposed to provide a steady flow of new capital, proved spasmodic.

• More and More—So Walter was forced to intensify his efforts to raise money. With the public sale of Jim Walter Corp. securities providing the capital for large-scale expansion, he found he needed more money than ever.

One trouble was that bankers were put off by the capital structure, implying that Walter's method of borrowing on a short-term basis to lend out long-term would land him in trouble. He did get some help from a few banks and $1-million from Walter E. Heller & Co., the Chicago commercial finance firm (BW—Oct.25'58,p116), which took his mortgages as collateral.

• Deal—But his situation was desperate, and out of desperation Walter made a deal through another Tampa broker to sell part of his holdings. The broker found a buyer in Ferro Machine & Foundry, Inc., of Cleveland, which put up $302,000 for 20,000 shares of Jim Walter Corp. common stock, plus 100,000 "A" warrant options and 10,000 "B" warrants. In addition, Ferro lent money to Jim Walter Corp., and Ferro's investment banker, Prescott & Co. of Cleveland, got the company bank lines of $6-million. For this service, Walter paid $120,000.

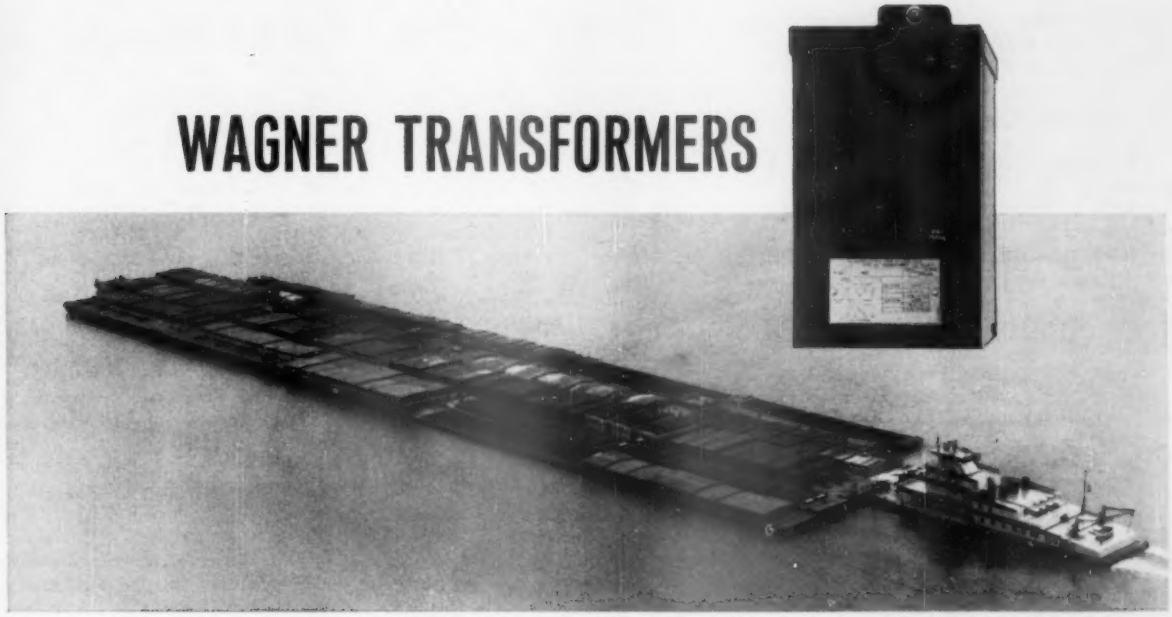
This was a costly way of raising money, for Walter gave up over 20% of the company to Ferro, which subsequently made a killing. But Walter felt he had no choice, and he argues that the $6-million in bank lines was worth a great deal to him.

In 1957 and again in 1959, Jim Walter Corp. sold its 9% bonds and its common stock to the public (the first offering was made by Prescott and Carl M. Loeb, Rhoades & Co., whose partners owned 49% of Ferro, the second by Alex. Brown & Sons, a Baltimore investment banking house). These offerings raised a total of over $4-million for the company, and another $4-million for Walter, Alston, and Saraw.

• Second Thoughts—In retrospect, Walter feels that he cannot complain, because he is now a rich man. But he says that the capitalization would have presented no difficulty if the warrants had been callable at precise intervals, so as to insure a steady flow of funds into the company. Some bankers question whether the warrants could have been sold with that kind of provision. As one put it, "Walter succeeded despite the capitalization, not because of it."

The troublesome warrants are all callable after Dec. 21, 1960, if a majority of the common stockholders vote

WAGNER TRANSFORMERS



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their redemption. Walter plans to ask the stockholders to agree to call them, and feels confident he will be supported.

IV. Capital Cleanup

The cleanup of the capitalization, leaving only the 8% and 9% bonds and common stock outstanding, will bring many benefits. The most tangible is that conversion of warrants and warrant options will provide the company with over $11-million in cash. (Even today, it needs almost $1-million in new cash a month.)

In the longer run, the inflow of money will serve to increase its capital base, magnifying its borrowing power. In fact, Jim Walter will not only be able to increase its over-all borrowings to three times the present level, it will also be able to borrow more cheaply and flexibly. For instance, it will be in a position to get intermediate term money—five to 15 years—from insurance companies. And it will be able to supplement its bank lines by going to the commercial paper market.

• **Big Saving**—The chances are that once the capitalization is simplified, the banks will be willing to advance more funds to Jim Walter Corp. at lower rates. Today, the company pays 6% for its bank credit, leaving 20% of its credit line on deposit as a compensating balance when it is borrowing, 10% when it is not.

Thus, the cost of its bank borrowings runs well over 7%—a lot of money for a firm deeply in hock. But if, for example, the banks put through a cut of 1% in its charges, that could mean a huge saving.

• **Hefty "Nut"**—This relief will help to offset the 9% interest it will pay on its expanded permanent debt. Over $21-million in long-term bonds will be outstanding if the call on the warrants is voted; that will entail interest payments of close to $2-million a year. Company officials say that this is a hefty "nut" to crack, but they are fully prepared to live with it. They point out that with time charges on mortgages now bringing in over $3-million, they will have no difficulty meeting their own indebtedness.

The cleanup will increase the common stock outstanding from 1.2-million to over 2-million shares, but Walter is confident that increased earnings will prevent any dilution.

V. Driver and Team

Success has actually increased Walter's confidence in himself and his company. He thinks the going will be much smoother in the future simply because the spadework and slogging of his pioneering days is over.

Walter is now rich enough to indulge himself by buying a ranch for hunting and a hotel in Tampa "where I can put up my friends." His soft deceptive drawl masks his drive, but he is clearly the prime mover in Jim Walter Corp. and has no desire to rest on his laurels.

Walter makes a point of saying that his success is the result of a team effort. He works closely with Alston, a wiry and energetic 38, and Saraw, 31, who has taken over the internal organization of the business. Another top Walter team man is Joe B. Cordell, 32, a former Price, Waterhouse accountant and the only outsider brought into a key management post.

This relatively small and tight-knit group heads up a staff of 450. It is a young company, with only five employees over 40 years of age.

• **Selling**—Alston keeps in close touch with his branches in the field by means of Teletype and a group of regional managers who, in turn, are constantly touring their territories. A great deal of attention is paid to location of Jim Walter display centers, and Alston has drafted an army of "bird dogs," usually Jim Walter customers, who get a bonus for turning up new prospects.

Advertising and promotion are also important. Alston budgets these expenditures as just below 3% of sales, devotes most of the money to hard sell newspaper spreads and television spots which, he says, have "proved to be the big pullers."

• **Stronger Competition**—The sales team keeps close tabs on its competition. While no other shell builder blankets the field like Jim Walter Corp., in many places, including Atlanta and Tampa, there are many small outfits.

And competition is getting stronger. For example, National Homes Corp., the nation's biggest prefab maker, has set up a wholly owned subsidiary, Kahler Craft Homes Corp., that is now in the shell home field. National Homes frowns on the Jim Walter shell as "minimum housing," insists that its prefab shell, selling from $2,800 to $6,000, is a high quality "basic" home, using the same materials going into its prefab finished models.

National is not active in the South, the heart land of the shell home, but confines its activities to the Midwest. Jim Walter Corp. has invaded National's home grounds, and its low-priced shell is meeting with the same success that it has enjoyed elsewhere.

Walter feels his product has many advantages over the prefab, finished or shell. Jim Walter's independent construction crews will alter basic designs to a customer's specifications, so that each of its many models is subject to almost infinite variation. Jim Walter will also build anywhere.

• **Smaller Ones**—Walter is more concerned about the small builders who, finding it difficult to compete, have tried cutting prices or have offered special "packages" of plumbing and lighting fixtures. Usually, these outfits have foundered for lack of financing, but as soon as one disappears another crops up.

Last October, a new finance company called Shell Home Finance Corp., opened for business in Atlanta, Ga., seeking to place shell mortgages with institutional investors. It claims to be doing a land-office business, although it is still small compared to the Jim Walter operation.

VI. New Frontiers

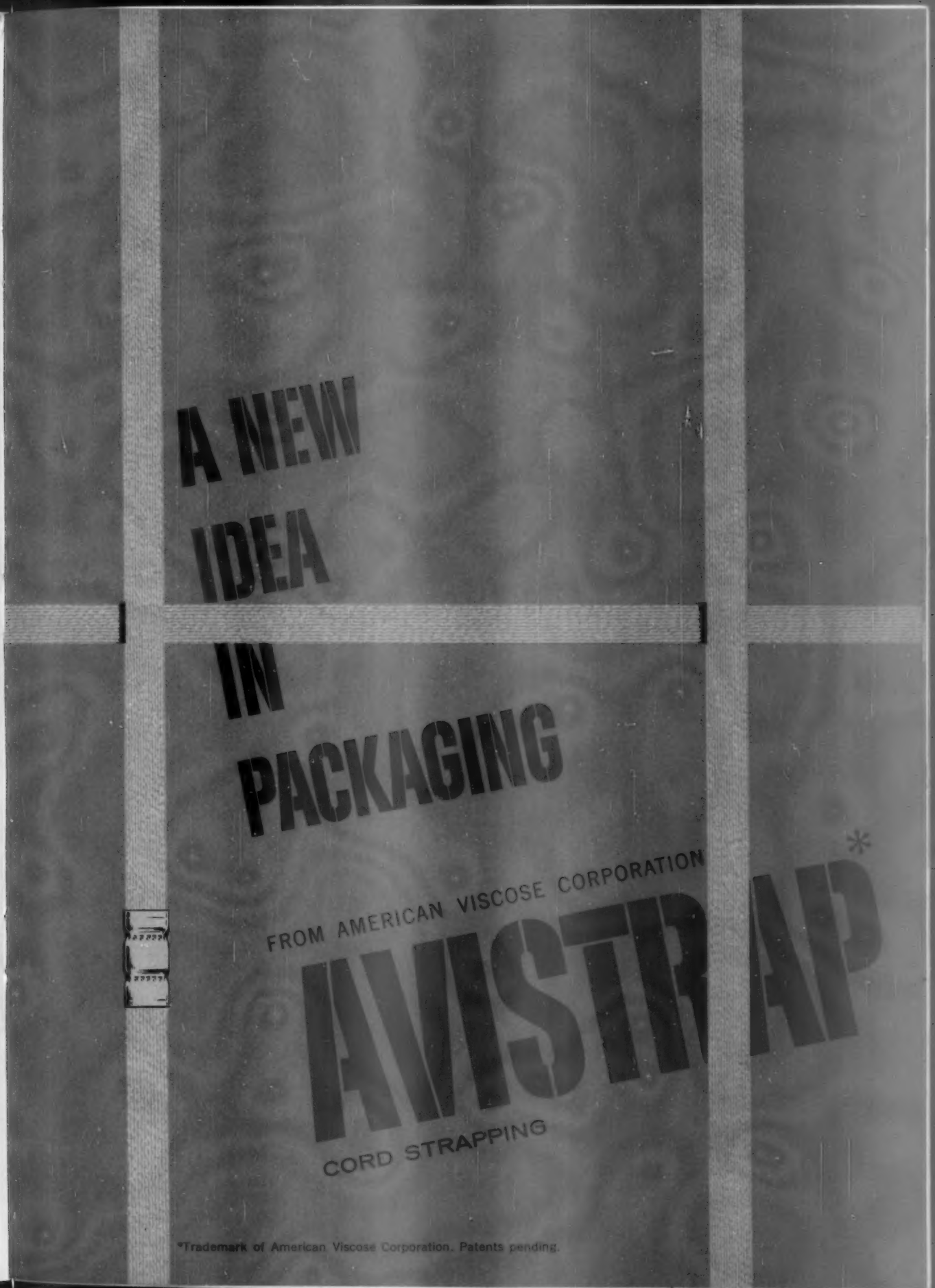
Shell homes were once considered a purely Southern phenomenon. But Jim Walter has extended its operation as far west as Arizona, and as far north as Illinois, Indiana, and Virginia. Walter doubts that the shell can be sold as easily in colder climates, where codes usually require a cellar as well as plumbing and lighting. But he is thinking seriously of invading California, where he sees a vast market.

But if he goes into California, building restrictions will force him to offer more than the present shell. Plumbing and lighting will have to be included; that will increase the purchase price, and may involve lengthier terms.

• **Changes Ahead**—Walter thinks the shell home fills an important gap in the housing picture, one that is likely to grow in importance. But he can see some changes coming. For example, his present shells are much more pleasing and contemporary in design than the first models, and if competition—or building codes—force him to offer a plumbing package he will do so. But he does not intend to get involved in installation problems.

Certainly, the market for shell homes continues to grow. For example, Jim Walter Corp.'s original Tampa office is selling more homes today than it did any time in the past. And Walter points out that an increasing number of shells are being sold as second homes in resort areas. To meet this new demand, Jim Walter has come up with a beach model, complete with planked patio, and a hunting lodge on stilts.

• **Goals**—Jim Walter Corp. is aiming to establish 100 branches by August, and estimates that the company may have 150 branches before it comes close to meeting the demand. This kind of expansion, implying a stepup from this year's 14,000 to about 20,000 homes a year, will require new money. But the kind of acceptance that Walter is now getting makes him feel that he will have no trouble on this score. Says he: "Our record is now accepted by lenders. In the old days, I used to do all the wooing. Now, I am being received on all sides. It's a nice feeling. My only regret is that it didn't happen sooner." END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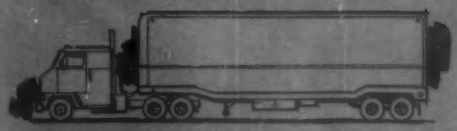

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Extensive testing in actual industrial use has proved AVISTRAP cord strapping delivers new [illegible] safety, and many more [illegible] pers. Just a few, in addition to other [illegible]:

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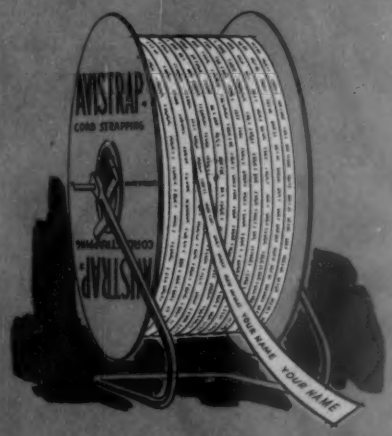

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• • •

Steel Industry Reviews Shortcomings In Last Year's Bargaining Strategy

Industrial relations and public relations executives of companies in the basic steel industry met during American Iron & Steel Institute sessions in New York last week to review their coordinated strategy in last year's bargaining with the United Steelworkers. Generally, they agreed:

• The industry accomplished much of what it set out to do in its campaign against further inflationary labor costs, but failed to win away employees on the complex work rules issue. **One poll of steelworkers in the final days of negotiations showed 78% were willing to accept the industry's economic proposals, but only 16% would endorse those on rules.**

• The success was in an area in which there had been long, painstaking preparations; the lack of it was in the complex rules area where public relations people were "caught with our . . . let's say, preparations down," said U. S. Steel's Phelps Adams. The introduction of the work practices issue caught steel's publicists by surprise. By the time they could support it, USW had made too much headway with a campaign to make the industry's rules demands a threat to the worker's security and to the union. The industry never caught up.

• **"Fear was the unseen rabble rouser of 1959—fear of layoffs, fear of loss of seniority, even fear of the companies themselves,"** said Republic's Thomas F. Patton. He noted that the industry showed in 1959 that it knows how to put across the facts on wages and inflation. Now, he said, it must do as well in putting across facts, simply and understandably, on complex and highly emotional issues involving job practices.

• It must get down to this job right away, on a year-round basis, looking ahead to the next bargaining; this is "a need and an obligation, and it may even be the price of survival in years ahead of our free enterprise system," Patton warned.

• • •

NLRB Acts to Reduce Labor Violence By Barring Services If Force Is Used

The National Labor Relations Board has acted to reduce violence in labor disputes. Stuart Rothman, NLRB general counsel, last week instructed 30 regional offices across the country to:

• Deny the use of NLRB's services and facilities to any parties that engage in force and violence.

• Seek "immediate" federal court injunctions to stop violence after the general counsel issues a complaint in an NLRB case.

Rothman said that it is NLRB's duty under federal law to "provide peaceful and orderly procedures for the resolution of industrial disputes." **He added that this "necessarily contemplates administrative action to minimize force and violence in labor disputes."**

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Doll Plant Employees Offer to Buy Company to Prevent a Move Into South

Employees of Horsman Dolls, Inc., this week offered to purchase the company from owner Botany Industries, Inc., for "over $1-million" to keep the Horsman plant in Trenton, N. J. Botany is contemplating closing the Trenton plant to transfer operations to Columbia, S. C.

An employee committee headed by Albert Peroni, a doll molder, found Horsman workers willing to invest substantially to preserve the plant and its 1,000 jobs. A telegram to Botany's Abraham M. Sonnabend made a "firm cash offer to buy the equity of Botany under its purchase agreement with former stockholders of Horsman (in 1957) and assume your obligations thereunder."

Sonnabend replied that he would advise that Botany's directors "accept a reasonable offer." An offer was made and the Horsman committee says it's under consideration.

Horsman employees met early this week to put up the money—a large part of it raised by securing personal bank loans.

• • •

Month-Old Strike at Crane Co. Settled

The United Steelworkers last week ended a month-long strike against the Crane Co. in Chicago after a settlement that Crane said would cost it 8½¢ an hour. The union estimated the cost at 3½¢.

The company agreed to revise its pension program—upward—and to pay the costs of insurance.

Crane agreed, among other things, to adopt a plan negotiated in the steel industry to help workers into retirement. It will give them a lump sum payment of 13 weeks wages when they retire. This will include 3½ weeks of vacation pay for the year of retirement. Monthly pensions will not start until after the 13 weeks.

• • •

Pontiac Bus Strike Ends

The Street, Electric Railway & Motor Coach Employees last week claimed a victory in a long strike that stopped Pontiac, Mich. bus service.

Pontiac Lines, subsidiary of National City Lines of Chicago, has stepped out. The American Transit Corp. of St. Louis is expected to organize a successor company to resume bus service in Pontiac. **A union spokesman announced that striking drivers will be hired for their old lines with an increase in wages**—issue in the long walkout.

MORE NEWS ABOUT LABOR ON:

- P. 78—Campaign year for Reuther, too.
- P. 80—Negro unionists organize for action.
- P. 82—How union funds stand today.

Campaign Year for Reuther, Too

UAW chief is keeping cards close to his vest, but his "routine" speeches indicate he hopes to elect people who see eye to eye with him. Meanwhile, union affairs can wait.

"What is Walter Reuther up to?"

Recently that question has been bothering auto industrial relations people. They're never happy unless they have a pretty good idea about what the United Auto Workers' president is working toward—and that goes whether auto contract negotiations are a year or so off, as now, or more imminent.

The newspapers, as always, show the surface of Reuther's broad activities. In recent weeks he has made speeches to, among others, students at Yale and Cornell and at a Brooklyn high school, the AFL-CIO Industrial Union Dept., the National Assn. for the Advancement of Colored People, and the Committee for a Sane Nuclear Policy.

He has issued statements on medical care for the aged and on his neutrality in pre-convention politics, testified in person before Congressional committees, and testified through a UAW employee at a hearing on prepaid medical service rates held by the Michigan insurance commissioner.

And, one day, at the behest of local union officials he even went out to Dearborn, Mich., for lunch with Henry Ford II and other company officials to discuss employment prospects at Ford's big River Rouge works.

• **Guessing Game**—All these were routine for Reuther—even the lunch at Dearborn over matters not necessarily appropriate for such a high-level meeting. Reuther nowhere gave an inkling of what he might be up to that would affect the auto industry—if he is up to anything at all this early and with the outlook so uncertain.

Of course, the classic labor leader strategy is to keep the opposition guessing. Whether by accident or design, Reuther is doing that to perfection. There are all sorts of reasons why the auto people—suspicious of Reuther anyway—think he must be up to something concerning existing auto company contracts or preparations for negotiations next year. Things have been too quiet.

What Reuther apparently is up to is trying to elect office holders who share his social, political, and economic views. That would account for his many speeches and statements on things that seem to bear little relation to the day-to-day job of representing members in jousts with management. There is one thing evident these days in private talks with UAW leaders: They are greatly impressed with the nature and philosophy of European unions, which make sweeping gains—mostly in the area of social benefits—not through negotiations but through legislation.

This is not a new development abroad, of course, but for some reason it has never been pointed out as much by UAW leaders as in the past year.

• **Time for Politics**—The emphasis during the UAW convention last fall was on the need for political action by union members. It might be argued that UAW leaders have nothing better to do with their energy this year because auto contracts do not come up for renewal. But the fascination of Reuther and his people with political activity this year is much more than an in-between-negotiations interest. It was planned.

Early one September morning two years ago, reporters lounging in the hall outside the room in the Detroit Leland Hotel, where Ford and union negotiators were starting to agree on a new contract, heard that UAW had accepted a three-year term instead of the shorter period that union bargainers had been insisting was an absolute "must."

The news was greeted with interest but no surprise by a company executive who participated in bargaining plans. "We figured from the start that we could get a three-year deal," he said. "Walter doesn't want to negotiate in 1960, he wants to be free to politick."

• **New Strategy?**—That still seems like a good explanation for the longer contract, but even Ford people who believed it then (and still believe it) have been uneasy since the steel settlement was made. They wonder if Reuther is following some new strategy now.

In 1958, Reuther negotiated from weakness—an unaccustomed position for him—and had to take the best deal he could get. It was not a very good one compared to what he had promised his members the year before the negotiations began; it did not put any new money into the auto workers' pockets.

Meanwhile, the economy strengthened. The auto industry—or all but Chrysler—had a good year in 1959 and now is moving toward one of its most profitable years. The steel union "won"—if anybody ever wins in such a Donnybrook—a long strike against the steel masters, gaining, significantly, fully paid health insurance. There is more than a little uneasiness that the economy may be topping off and may even soften a little in 1961—which is when Reuther has to go back to the bargaining table.

• **Long Memories**—You could hardly think up a better combination of circumstances to impel a union leader to exert pressure for a contract reopening. But nothing seems to be farther from the thoughts of Reuther and his UAW associates. It is true, as UAW people point out, that auto contracts have what seems to be non-contestable language against a reopener. But it also is true that no one in Detroit can ever forget the famous "living document" reopener in 1953 that was levered by a strike in a key supply plant.

Because they can't forget it, the rash of strikes that hit the auto industry this late winter and spring was watched closely for signs that the union was getting ready to put on the pressure. But the pressure never came. Instead, as the weeks wore on, it became plain that these were the kinds of strikes that ordinarily are called in the new model break-in period in the fall before work standards are fully developed. Disputes over production standards just happened to be delayed by the steel strike.

"If they wanted to put pressure on us," said one company labor relations director, "they would pick a supply plant." It was true that supply plants were struck—but over well-defined issues. Settlements came about through routine processes.

• **Rouge Plant Example**—Still and all, there has been a pattern to the labor disputes in the auto industry this spring. And the basic cause is simply expressed: more jobs. This was an issue in a long strike at a General Motors plant, and it was the issue that sent Reuther out to Ford for lunch with the company brass. The Rouge and Local 600 furnished an exaggerated but still good example of what is worrying the union.

In the palmy days of five years or so ago, Local 600 boasted more than 60,000 members. Today it has around 25,000 members working, although it carries thousands more on its rolls. Meanwhile, Ford employment in the Detroit area has increased. As market tastes changed, a lot of work was moved out of the Rouge. Leaders of Local 600 have been consulted in the past on the types of products Ford would build in the Rouge, and they picked the V-8 engine and the standard-sized cars. They guessed wrong both times.

Now, Local 600 leaders are understandably concerned when Dearborn engine plant and assembly plant workers are on layoff or short weeks while the UAW members in Ohio who make

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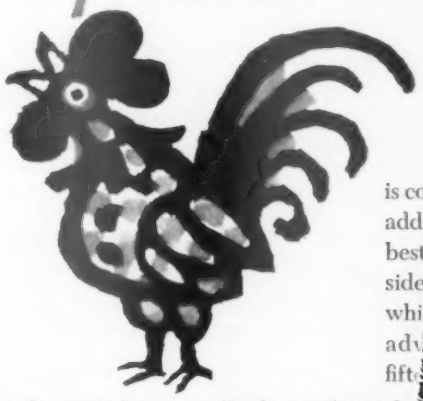

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• **Battle Cry**—Meanwhile, things work together. A heavy decrease in employment, such as has taken place in the Rouge, gives Reuther fuel to ask for a shorter work week. The fat profits of the auto companies this year—taken due note of at a UAW Ford Council meeting a few weeks back—are bound to set UAW chiefs thinking again about some form of "profit-sharing."

The steel union's accomplishment makes it certain that UAW next year will be in full cry for fully paid medical benefits—which it has asked for in every negotiation but never pressed. The decreasing employment would provide a backdrop for a better program for early retirement. You can lengthen that list and connect each point with at least one other.

So when an auto executive wonders "what is Walter Reuther up to?" it is mostly rhetorical. He thinks he knows, but his knowledge doesn't make him happy. For it could be that Reuther will not repeat his 1957-58 performance of provoking a public debate with the auto industry over new-contract goals. The goals will be many and varied, and may not seem to be what they really are, and all be inextricably bound up with political activity and national legislation on such long-time UAW objectives as prepaid medical care for the aged—once a contract goal but now in a political area.

Negro Unionists Organize for Action

Their new NALC doesn't intend to be a "black federation" rivaling AFL-CIO—but the latter is still worried.

Negro union members have organized a non-violent revolution for equality and an end of discrimination in the labor movement—and there is no doubt about AFL-CIO's concern over it.

Some 800 delegates from 18 states—some deep in Dixie—set up a Negro American Labor Council at a turbulent founding convention in Detroit last weekend. The sessions were the culmination of months of advance work and planning (BW—Apr.30'60,p139).

• **Undercurrents**—A. Philip Randolph, 71, the $14,000-a-year president of the Brotherhood of Sleeping Car Porters, the man who has worked untiringly to found NALC, was named president, a post that pays nothing. But Randolph was not in full, unchallenged control of the convention. There was an undercurrent that had to be kept in check.

This is what bothers AFL-CIO leaders most. NALC says it has no intention of being a "black federation of labor," opposed to AFL-CIO. Yet, potentially, it can be.

The test for the federation will be whether, under pressures from NALC, it can enforce its policies against discrimination, segregating, and "Jim Crowism" without perhaps serious internal ructions.

• **Goals**—NALC hopes to represent 100,000 Negroes before its next convention, a year from now. Its longer-term goal is 1¼-million, not only in AFL-CIO—where it will concentrate first—but in independent unions such as the United Mine Workers and the International Brotherhood of Teamsters.

Two fights on issues showed the aggressiveness of the delegates:

• A sharp dispute arose when a determined corps of left-wingers and Teamsters tried—unsuccessfully—to prevent NALC from incorporating opposition to Communism, corruption, and racketeering in the labor movement in its policies.

• Another came up when 75 women delegates revolted against an all-male slate of 16 nominees for vice-president—and forced the convention to increase the number to 18, including two women.

• **Policies**—The convention adopted as "basic policies":

• NALC is not a labor union and will not seek to become collective bargaining agent of any group of workers to negotiate on wages, hours, or rules governing work conditions—that is, it won't intervene with employers to bargain for Negroes where they charge that their interests aren't adequately represented by unions but will apply pressure on the unions.

• NALC isn't against AFL-CIO but for the federation and its leaders. It says they are committed to policies against discrimination and other forms of bias and "only need our support—maybe a little prodding."

• The organization will be nonpartisan but not nonpolitical.

• **Attitudes**—The delegates, without outward rancor, appeared to regard NALC as an answer to AFL-CIO Pres. George Meany, who last fall shouted at Randolph, "Who the hell appointed you the leader of the Negro people?"

However, Richard Parrish, a New York public school teacher, elected NALC treasurer, said, "This is the answer to Meany only in part. There's no question in the Negroes' minds that Randolph is their elder statesman. More important, this is a movement born of necessity." END

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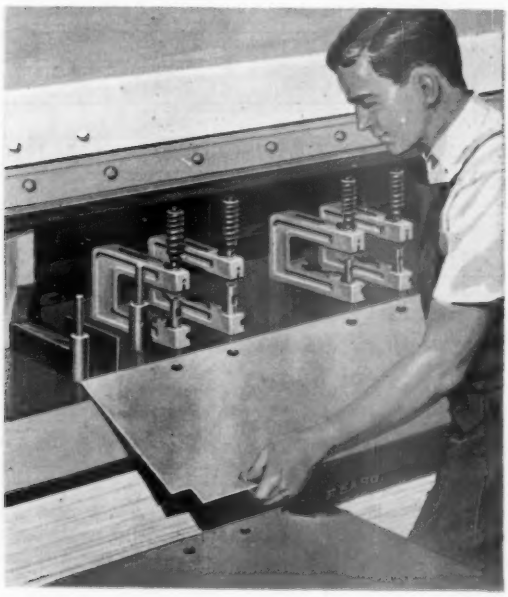

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How Union Funds Stand: Some Flush,

UNION	MEMBERSHIP	FINANCIAL STATUS				
				SECURITIES		
		NET ASSETS	CASH	GOVERNMENT BONDS	MARKETABLE SECURITIES	LAND AND BUILDINGS
Teamsters	(1.4-million)	$38,418,263	$919,293	$7,369,791	$23,544,045	$5,021,360
Hod Carriers	(476,598)	21,253,498[1]	716,457	4,964,890	10,605,621	4,188,067
Mine Workers	(600,000)	110,315,080	19,059,007	15,183,754	16,409,278	2,904,060
Ladies' Garment	(442,901)	19,119,459	1,789,257	20,245,959	6,106,304	
Operating Engineers	(280,000)	19,366,569	1,451,674	14,444,529		3,132,944
Building Service	(260,000)	3,359,840	323,653	896,547	205,608	333,000
Steelworkers	(960,000)	26,440,806	3,835,874	20,919,632	13,467	19,207
Amalgamated Clothing	(376,000)	7,542,945	411,731	3,933,036	790,883	
Auto Workers	(1,027,000)	30,373,190	5,656,774	13,686,225	22,221	8,523,097
Longshoremen	(90,000)	442,173[4]	2,624			
Seafarers of N.A.	(75,000)	130,769	86,787			
SIU, Atlantic & Gulf	(18,500)	3,402,881	573,289		25,000	239,200
Sailors' Union of the Pacific	(6,000)	5,127,369	974,439	644,191		
Machinists	(992,689)	22,181,489	1,950,028	9,150,785	7,021,912	3,638,738
Sheet Metal	(75,000)	3,184,727	376,306	2,675,606		
Conductors & Brakemen	(26,532)	957,775	96,144	190,563		100,000
R.R. Telegraphers	(62,276)	938,539	93,569	576,825	31,117	199,133
Plasterers	(65,881)	2,290,430	433,925	1,679,000		
Am. Communication Assn.	(8,000)	166,911	167,550			
Flight Engineers	(3,200)	133,207	28,227	81,490		
Hosiery	(5,875)	251,263	38,018	212,420		
Leather Workers	(10,000)	21,183	17,423			
Stone & Allied	(11,815)	54,024	51,170			
Toy & Doll	(18,900)	27,528	22,002			
Marble, Slate & Terrazzo	(9,788)	463,543	334,243	14,800	500	
Mine, Mill & Smelter	(100,000)	148,101	78,025	83,823		44,103
Air Line Pilots	(13,664)	3,191,020				810,896
Glass Bottle Blowers	(53,500)	1,973,561		733,123	1,198,891	
Airline Dispatchers	(630)	42,212				
Window Glass Cutters	(1,600)	272,563[7]				42,380
N.Y. Newspaper & Mail Deliverers	(4,000)	245,340	159,412	102,660		
International Mail Deliverers	(4,200)	13,020	10,945			

[1]General Fund, Death Benefit Fund & Retirement Fund. [2]Half Returned to Local. [3]General Fund, Strike, Miscellaneous Funds. [4]Net Liabilities.

Unions File 1959-60 Financial

A few days ago, the Amalgamated Meat Cutters & Butcher Workmen announced that it will sponsor a $96-million middle-income apartment project over the New York Central's railroad yards in New York.

In Chicago, the Building Service Employees' International Union is pushing a $36-million housing project (BW–Mar.5'60,p38). Other unions are similarly investing in housing or considering the economic and social reasons for putting reserves to work in that field.

Labor's growing treasuries and welfare fund reserves are being used more and more for projects that grow out of the unions' social consciousness. The housing programs are for middle-income groups. And most reflect a general conservative union investment policy and strength of reserves.

• **Healthy Reserves**—There are exceptions, of course, but few unions have to

Some Dwindling

RECEIPTS		DISBURSEMENTS			
INCOME					
TOTAL	DUES AND FEES	TOTAL	STRIKE AID	OTHER SIGNIFICANT EXPENSES	
$6,023,071	$4,019,386	$5,753,887	$978,900	Monitors, $123,448	
8,478,465	4,364,981	8,739,662		Death Benefits, 812,396	
5,146,470	3,700,110	5,699,620		Relief Payments, 832,256	
6,733,529	3,880,318	6,781,501		Organizing, 293,871	
5,589,607	4,339,437	5,138,943	80,581	Death Benefits, 753,675	
3,350,104	2,243,028	3,824,638		Death Benefits, 690,050	Contribution USW, $100,000
62,097,655	50,128,768[2]	61,795,472	6,333,342	Organizing, 351,513; Conference Expenses, 588,655	
5,029,045	3,202,021	5,043,726		Organizing, 275,480	Contribution USW, $100,000
42,066,240[3]	35,246,854	37,854,403	12,655,558	Public Review Bd., 51,323	Citizenship & Education, 681,306
243,974	212,138	248,256		Legal Fees, 179,218[5]	
267,911	251,454	339,278			
3,133,799	2,038,129	3,088,494	5,434	Organizing, 118,872	Contributions Other Labor Organizations, 500,098
935,269	553,163	1,104,458			
19,107,485	17,136,901[6]	17,437,006	4,498,840	Organizing, 475,642	
2,884,079	2,353,348	2,635,875	37,025	Conferences, Meetings & Organizing, 65,665	
1,447,657	672,836	1,568,364	26,186		
1,155,959	819,208	1,397,250			
1,345,177	1,263,133	1,491,677		Death Benefits, 245,363	
122,099	273,308	112,287			
464,467	346,808	574,211			
237,007	143,122	217,792		Death Benefits, 12,931	
108,339	96,036	105,896			Contribution USW, 1,000
424,252	335,110	406,085	22,063		
158,960	157,549	163,674		Organizing, 34,567	
192,278	134,710	180,243			
893,193	767,482	1,106,118	260,785		
2,703,254	2,679,143	2,607,416			
1,773,639	1,735,795	1,078,582		Conference Expense, 149,275	
57,601	56,192	50,632			
305,021	207,982	235,267		Benefits, 85,778	
584,571	562,072	619,916	7,404	Pensions, 262,665	
255,862	156,022	271,872			

[5]Carried as Accounts Payable. [6]Includes $4,190,724 to Strike Fund. [7]Total Assets.

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Reports

worry about their financial backbone today. Many are wealthy, although the wealth is likely to be in reserves that cannot be tapped for increasingly costly operating expenses—administrative costs, organizing, strike benefits, and so forth. Only a comparative handful of smaller unions are seriously pinched—and their problems are minor ones beside the hand-to-mouth bankruptcy days of the unions three decades ago.

• Proof—The table above showing how union funds stand today provides a substantial documentation for that. It is the first broad summary of union financial reports filed with the U. S. Labor Dept. under new federal fund disclosure laws. The table includes all international unions that had filed reports in mid-May—roughly one-third of the number required to file within 90 days after the end of their current fiscal years. Some others are delinquent in filing but most, about 50, are not due to file until after the end of June.

The reports so far show two things:

• The economic times, with high costs and declining union membership, have hit the unions hard. About half that reported are running in the red.

• Whether in the red or comfortably in the black, most unions are build-

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ing up impressive treasury figures. The size of the union does not necessarily have any bearing on this. Some smaller organizations that offer many of the benefits of the benevolent societies of yesteryear have hefty treasuries, but lumped into the over-all totals are reserves for pension, medical and hospitalization, and in some instances burial costs. Such funds are restricted in use but the unions usually are free to invest the reserves in government bonds, sound securities, and more commonly now in housing.

• **Out in the Open**—In the past, many unions kept their financial status a closely guarded secret. It was almost impossible for an outsider to ferret out information concerning their finances. This was largely a throwback to the early, precarious days of unionism. Leaders were afraid to reveal any possible vulnerability.

Some unions overcame these fears and began to issue detailed reports some years ago. The changing status of the union movement, its growing financial power, was indicated when they did. A BUSINESS WEEK survey a decade ago (BW—Nov.19'49,p114) estimated the unions' total wealth at a very rough $2-billion. It's much more now.

Under the federal public disclosure act, almost all unions will have to file financial data open to the public. Anyone can obtain a copy at 26¢ a page. So, in time, the full financial picture of American labor today will be developed. It is showing up already.

• **Union Ratings**—The first batch of reports filed by internationals shows a substantial number of unions with net assets of $1-million or more. In all, 16 or half showed this degree of financial security, varying in size from the Air Line Pilots' Assn., with 13,644 members and a net worth of $3,191,000, to the UMW, with 600,000 and labor's greatest wealth, $110-million.

The country's largest union, the International Brotherhood of Teamsters, with 1.4-million members, reported $38-million in net assets.

At the other end of the security scale, the 10,000-member Leather Workers International Union reported $21,183.

As the table shows, most of the first unions reporting have enough reserves to prevent immediate financial worries, even if the total is well under the million-dollar level. The one exception would seem to be the International Longshoremen's Assn., which reported net liabilities of $442,173.

• **Expenditures**—Many interesting expenditures show up. For instance:

• The Building Service Employees' International Union reported that it paid a total $127,662 to William L. McFetridge, who retired recently as its president.

• The Teamsters spent $158,404

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Owens-Illinois paper products can box almost anything... even a roomful of furniture

What you see above is a corrugated box so big and strong that every piece of furniture in this room will be packed inside it for air transport.

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To solve shipper problems with corrugated, fiber or paper-plastic boxes is the job of the Paper Products Division of Owens-Illinois. The research and imagination behind O-I paper cartons are behind all Owens-Illinois products.

CONTAINER	Duraglas bottles & jars • closures plastic containers • plastic fitments corrugated & fiber paper shipping boxes • multiwall paper bags kraft paper for shipping boxes
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SCIENTIFIC	Kimble laboratory glassware vials • ampuls • clinical glassware
TABLEWARE	Libbey Safedge glassware • cut or decorated tumblers & stemware
BUILDING	glass block • glass curtain walls

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LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

for its Dept. of Legislation & Political Education in the last six months of 1959 alone; $589,587 for a half-year's educational and publicity work, and $123,448 during the period for the monitors supervising IBT affairs.

• UMW spent $1,275 for a portrait; it didn't mention whose.

• The ILA reported owing $179,218 legal fees.

• Indicating how high union administration costs can go, the United Steelworkers paid its 31 district directors $12,266.64 each last year, and reported their strike-affected expenses ranged from less than $10,000 each for seven to $20,000 or more each for 12.

• **How Invested**—The investment reports showed most money put into government bonds, for security. In addition to U.S. issues, unions with Canadian locals almost invariably have Canadian bonds, too. The Amalgamated Clothing Workers, International Ladies' Garment Workers' Union, and the United Auto Workers also reported investments in Israeli bonds.

Comparative figures weren't available in the reports, but it is almost certain that the securities totals in the table reflect more purchases of common shares.

• **Mine Workers' Deals**—As always, UMW's financial dealings deserve attention: They're so vast and diverse.

The union carries 289,018 shares in the National Bank of Washington at a book value of $9,131,503, although the market value now is more than double that. UMW reported it as $18,786,170 at the time of filing. The union owns 10% of the stock of the West Kentucky Coal Co., 85,000 shares bought at a cost of $2,611,397 but with a $1,419,775 market value at the time of the UMW report. The union also reported owning 50,000 shares of preferred stock of West Kentucky Coal, with a book value of $2.5-million.

It listed 33,590 shares in American Coal Shipping, set up with UMW backing to carry coal abroad to expand the market for American coal; the stock is carried at a value of $3,359,000.

And the coal union has pledged with the National Bank of Washington, which it owns, some $15-million in U.S. Treasury bonds to secure loans made by the bank, in the amount of $13,560,967, to companies engaged in coal mining or allied industries. The union reported payments of $264,711 on bank loans to firms under that guarantee.

• **Few Delinquents**—In mid-May, 17 internationals were reported delinquent.

Internationals aren't the only ones that must file reports; most locals also have to. Altogether, counting the locals, some 35,592 financial reports are now in. The Labor Dept. expects to have more than 52,000 on file by mid-September, when all unions have filed to comply with the disclosure law. **END**

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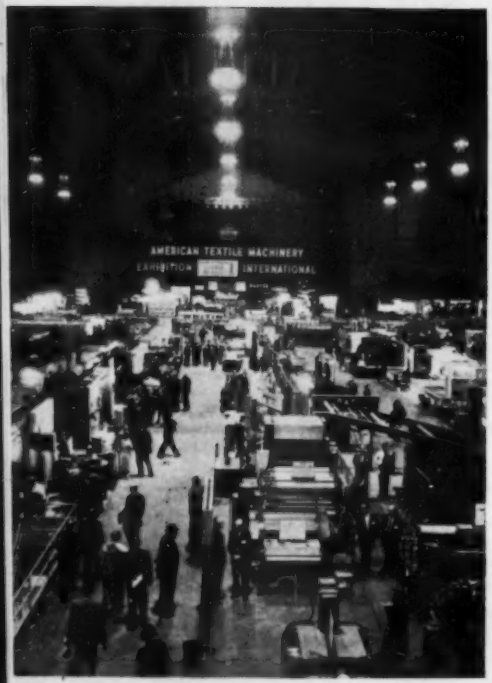


CLATTER of machinery at Atlantic City show made it vital for exhibitors to build soundproof booths for talking business.

In Textile Machinery, th

Manufacturers show off refinements of mill equipment and innovations such as the automatic winding machine above.

Every four or five years, textile machinery manufacturers throw a big, noisy shindig to show their wares to mill men. This year's was the biggest and noisiest yet.

It was held in Atlantic City last week in cavernous Convention Hall, where plain and fancy looms, spinning frames, cards, twisters, coners, and almost every conceivable kind of equipment from close to 400 exhibitors set up a din that stopped all but the bravest conversationalists. From the sound of it, the first truly international American Textile Exhibition was literally a roaring success (pictures).

But for a once-every-five-years show, there were comparatively few machines that an outsider would recognize as new. It takes an expert to distinguish the new from the old model of a spinning frame by the subtle difference in drafting gear or to discern, among the endless variety of winding machines, that the packages of yarn are considerably larger in the new ones. And you'd have to be able to recognize the traditional beat of a loom to know that one of the newer models is picking faster than its predecessors; your eye must be sharp to notice that it is weaving a hard-to-handle synthetic blend.

• **Slow to Change**—This type of gradual, subtle change is what textile men expect. Theirs is an old, mature—and giant—industry. It has been mechanized far longer than any other manufacturing business. Its machines have a product development cycle that averages, probably, 10 years from conception to production of relatively minor improvements in equipment. Its basic processes almost never change, and the speed of much of the equipment is limited by very basic considerations that have been thoroughly explored, refined, re-explored, and re-refined.

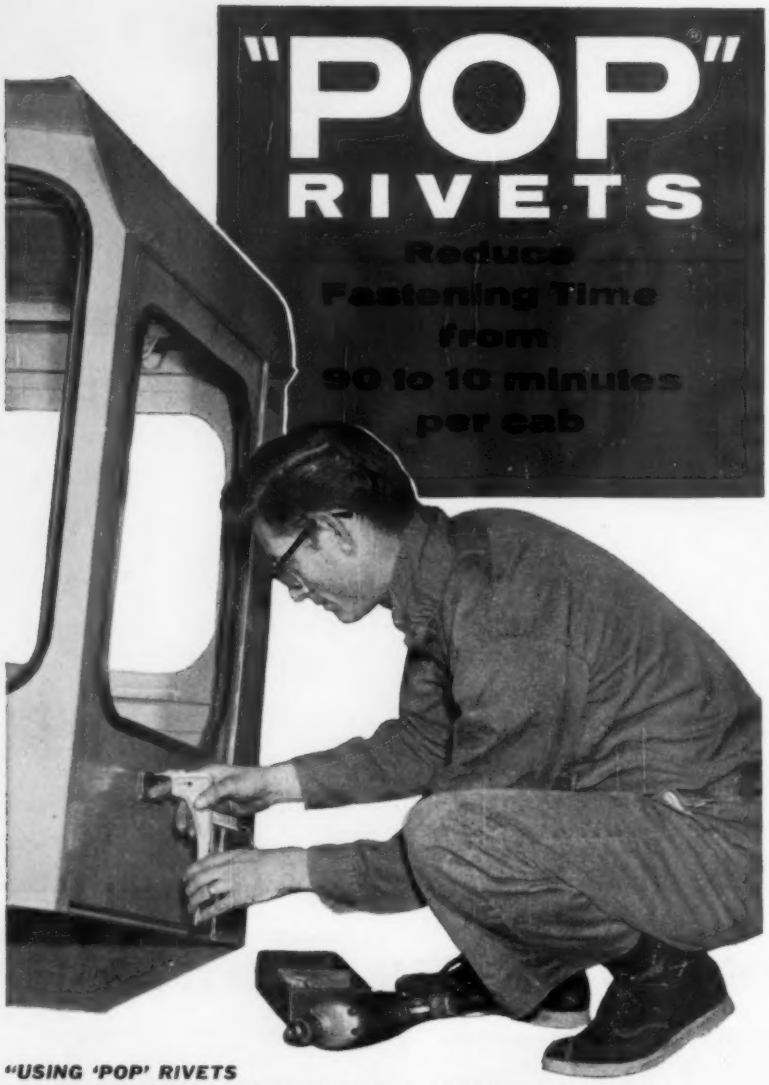
For example, yarn can be spun no faster than the speed at which a traveler—a tiny loop of wire or slippery

y, the Improvements Come Slowly

FANCY LOOM is shown off by F. W. Howe, Jr., Crompton & Knowles president.

FOREIGN makers displayed many wares—like this Jacquard weaving fancy pattern.

SHUTTLELESS loom is run in slow motion by Draper Corp. V.-P. W. K. Child.



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. . . mills want—and get—machines that run virtually unattended . . .

(STORY on page 88)

piece of nylon—will go around a circular guide. That speed governs how fast the yarn can be wound on the spindle, and it works out that the traveler just won't go much over 7,200 ft. per minute. Since you can't speed the spindle up, you add more spindles if you want more output.

If you are a machinery maker, you make the long spinning frames narrower and crowd the spindles closer together to put more spindles in the same space. Mill owners hate to add bricks and mortar; they like to be able to get more production under their same old roofs—that is, if they are looking for ways to up their production at all. A good share of the time they are actually wondering what to do with overcapacity. But they're always interested in cutting costs.

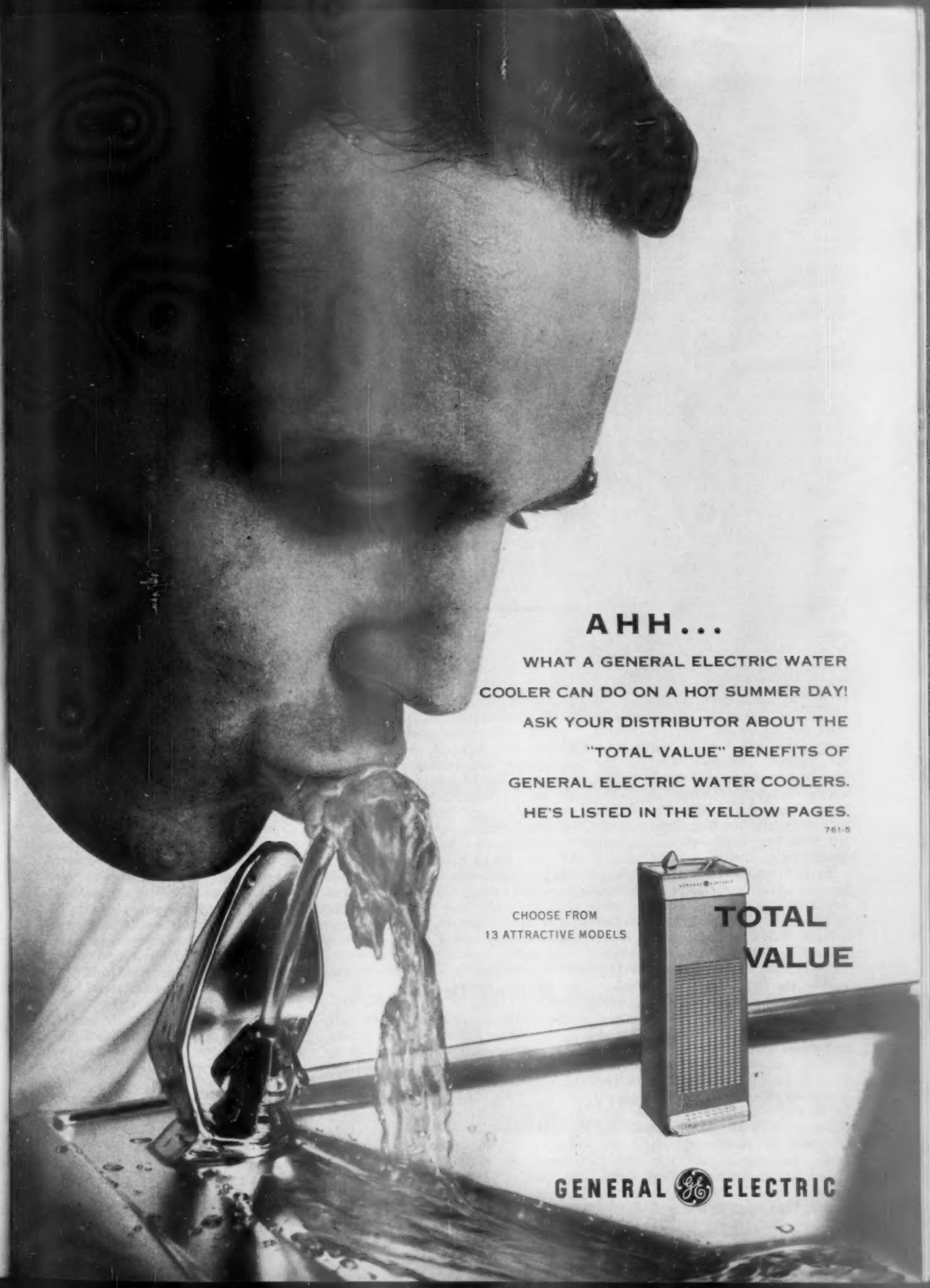
• **Money Savers**—One of the best ways to cut costs, of course, is to eliminate labor and reduce the need for maintenance. Textile mills want—and get—machines that run virtually unattended, perhaps with only one girl to watch as many as 8,000 spindles. They also want machines that need little down time for lubrication, cleaning, and maintenance. So looms and other equipment are commonly rated by simple efficiency—down time vs. operating time—and woe betide the new model that scores less than 90% to 95%.

The requirement for high efficiency explains the long product development cycle. No mill man in his right mind would invest in an untried machine. And he is accommodated to the hilt by his suppliers. New machinery is lent out on test to the mills at no charge—more often than not for years—while various small improvements based on actual operating experience are made back at the factory engineering departments.

The end result, after years of test running, is a shipping ticket to the Textile Machinery Exhibition—the maker's official certification that his machine is ready for market and that he is tooled up and ready to mass-produce at reasonable cost.

I. Veteran Machine Makers

The industry that supplies this machinery is unique. It's a tiny group that together does less business than any one of the four top textile mills. But from the textile man's viewpoint, it's something of a dream come true; it can supply capital equipment of remarkable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efficiency and durability at prices that most machine tool manufacturers consider ridiculous.

One reason for this may be the industry's generations of experience. Spinning and weaving are the oldest and most universal manufacturing activities, and it was the first industry to mechanize: It did so several decades before the use of electricity. The loom has been refined and speeded up for more than 100 years, yet it's still recognizably the same machine. It's about as big as a compact car, and though it's made by the tens of thousands per year instead of millions, it sells for two-thirds the price of an auto. By now, its components have become classic examples of fine mechanical engineering.

Some parts of a loom look easy to improve—until you try it. Good examples are the wooden picker sticks at the side that slap back and forth noisily throwing the shuttle. Looms with a different pick motion have been developed only in the last decade—and are still considered experimental. Most shuttles are still made of dogwood; the only plastic that would take the beating costs twice as much.

• **Price Structure**—By any but 20-year-old standards, the cost of textile machinery is reasonable indeed. The price of looms, preparatory equipment for handling fibers, and spinning equipment averages out to about 50¢ a lb., or about the same as farm equipment. Draper Corp. makes a brand-new single shuttle automatic loom for weaving plain fabrics that costs only $1,700; for $685 extra it comes fitted with an automatic bobbin winder, made by Leesona Corp., that will keep it running for days without attention. One of the really new products that starred in last week's show—the Draper shuttleless loom—costs only $2,700. It needs no bobbins at all, draws its supply of fill yarn from large conical packages called, appropriately, cheeses.

To most metalworking-tool makers, the price of textile equipment is remarkably low. "We've had machine tool people come in who look at a loom and estimate that it costs five or six times as much as it actually does," says William K. Child, vice-president of Draper.

• **Why the Low Tags**—The low prices are a result of a combination of factors: years of experience, constant foreign competition, the abundance of good used equipment, and the low profit margins of spinning and weaving mills, which make it difficult for them to buy equipment at anything but low prices.

The low machinery prices are one reason why it's almost impossible for new companies to enter the textile machinery business in the U.S. Other reasons include the high degree of mechanical sophistication of the equipment and the reluctance of mills to buy new gear until it has proved itself through years of operation. Besides, sales of mill equipment follow the feast-and-famine pattern of textile sales—but on a magnified scale.

ROBERTS CO. Pres. Robert E. Pomeranz talks equipment with D. E. Reynaud, president of Roberts' Italian affiliate, Tematex.

• **Slow Write-off**—To make matters worse, today's low prices of textile machinery don't look so attractive to mill operators who can remember 1939 prices. Then a Draper loom cost about $600, and a loom purchased at that price is not yet fully depreciated on the tax rolls; textile machinery, according to the Treasury Dept., has a useful life of 25 years.

Both millmen and machinery makers believe this depreciation rate is discriminatory and unrealistic. Technical improvements in textile machinery in the last 15 years have been quite impressive, though technological obsolescence is not quite so obvious as in capital equipment industries. In those 15 years, looms have scored a gain in efficiency and a productivity increase of perhaps 25% to 50%, while metalworking tools have increased many times in productivity, efficiency, and utility through new techniques such as tape controls.

II. Ups and Downs

So the textile machinery industry is up against a lot of tough problems. These are reflected in the plateau of the industry's sales volume. In 1947, textile machinery manufacturers shipped slightly more than $400-million worth of equipment. They hit their postwar peak in 1951 at $500-million, then plunged to $300-million in 1954. After a slight rise in 1956 and 1957, sales slumped to $322-million in 1958 and did only a little better last year.

This year, manufacturers are forecasting an industry volume of about $400-million. Benjamin O. Johnson, chairman of the American Cotton Manufacturers Institute tax committee, estimates that textile manufacturers will spend about $480-million this year on capital equipment, $336-million of it for replacing old equipment.

The picture he paints does not indicate any major change in the near future. The year 1959 was relatively good for the machinery maker's customers—the textile industry. Its sales totaled more than $13-billion. It employed more than 1-million workers in its 8,000 spinning and weaving mills. But it is highly competitive, with no manufacturer accounting for more than 4% of industry volume, and such competition keeps average profits slim. Textile mill products earned their manufacturer about 3% net after taxes—a return on net worth of plant and equipment of only 7.4%. The industry's depreciation allowance is about 2½% of sales per year, hardly enough to keep modern machinery replacing obsolete equipment.

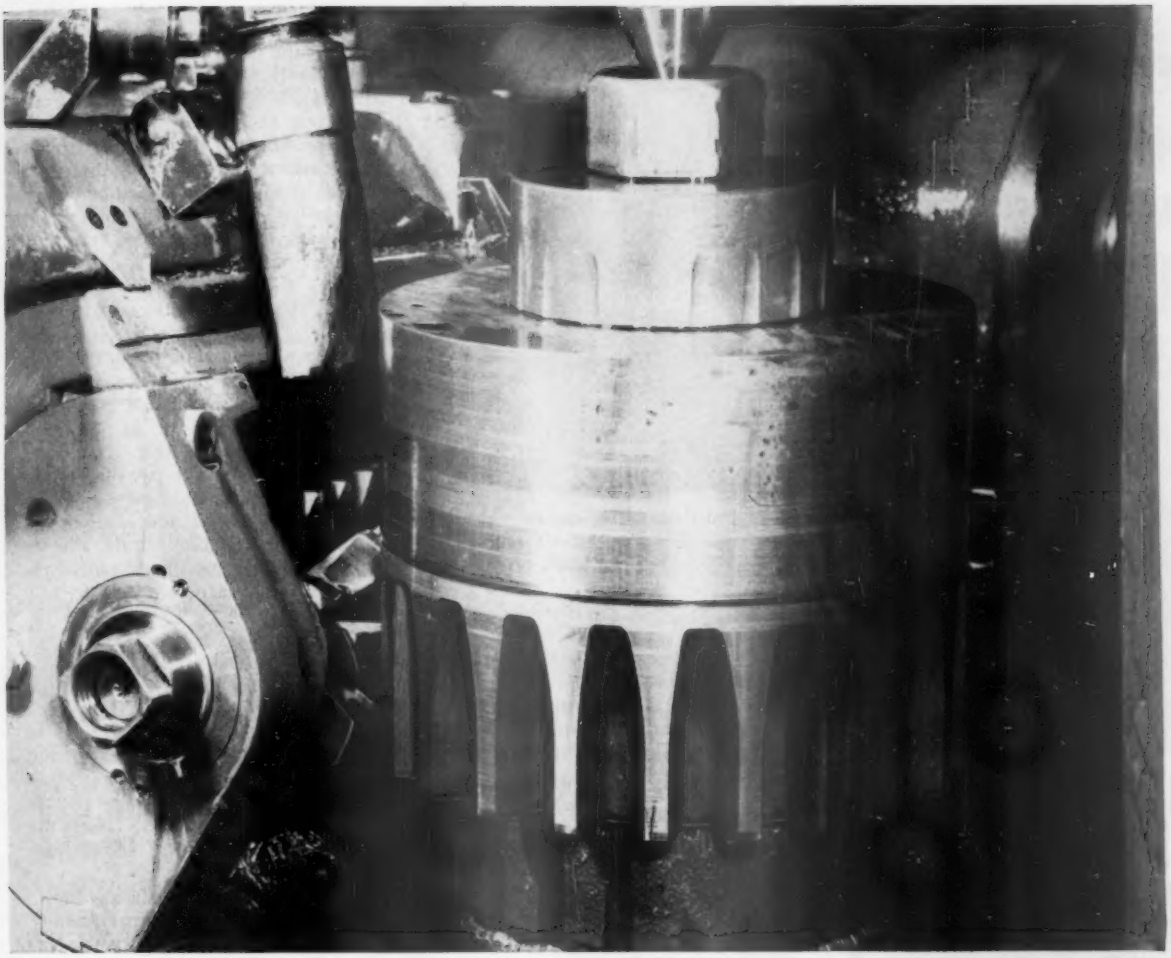
III. How Cloth Is Made

Outsiders who give textile mills and machinery makers a cursory examination often come away shaking their heads at the archaic-looking methods they see. Not until they try to think up a better or cheaper way to make cloth do they recognize the really remarkable mechanical achievements of the machinery builders. Cotton or wool cloth starts out as dirty fiber baled in huge bundles. Synthetics come as tiny filaments wound on little spindles. Just to get this material cleaned, blended, and untangled enough to begin to spin it into yarn requires a number of complicated steps.

First, it is formed into a flat strip called a lap. The lap goes into a carding machine that combs out the fibers with a huge wheel coated with tiny metal bristles. The carding machine has not changed significantly in 70 years; modern cards are merely somewhat larger and have more accessories. Each is about the size of a truck trailer, and the average integrated mill uses about 75 of them to feed, say, 25,000 spinning spindles.

The carding machines don't produce a product suitable for immediated spinning, however. For fine yarns, the sliver or rope of fibers must be combed. In any case, before it can be spun, it has to be turned into a less bulky string called roving. This job takes about 1,000 spindles in addition to those used for spinning.

• **Low Labor Costs**—After the yarn is spun, part of it must be rewound on spools that fit the weaving equipment. All of it eventually has to be reprocessed



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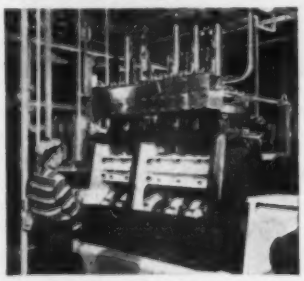

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The tough pumping problems go to

ALDRICH

NEW FACE in textile machinery industry is Robert Schooley of Matrix Controls Co., with device to measure width of cloth.

in order to get it on the warp beams and the quills that fit in the loom shuttles or the large packages for the shuttleless looms.

To weave the yarn output of 25,000 spindles, about 350 looms run seven days a week, 24 hours a day. These turn out about 250,000 sq. yd. of high-quality fabric per week. And the entire mill can be run by less than 30 machine employees per shift. In a modern mill, each worker can produce about 35 to 40 yd. of cloth per hour, thanks to highly efficient equipment. At $1.50 an hour, the direct labor cost in a yard of fine combed broadcloth is less than a nickel. That doesn't leave much room for further reduction.

So it's difficult for the textile machinery makers to sell their products on the argument that they will cut labor costs. Their salesmen have to justify the profitability of the new machines. Merely improving existing equipment is not enough. And thinking up a better system to make cloth seems virtually impossible.

• **Sales Pitch**—However, there are ways to persuade the mills to re-equip. Many mills are stocked with 40-year-old machinery that can barely break even. Such mills are a big and continuing market for new equipment—provided they don't go out of business before they make improvements.

Anyway, new equipment has obvious advantages. It often cuts out a lot of material handling by combining such processes as bale breaking, cleaning, and lapping. New spinning and weaving equipment can handle special kinds of fibers and fabrics—and gain for its user premium prices on goods—and this is relatively easy to sell. A typical example is Leesona Corp.'s stretch nylon yarn twister, which makes stretch yarn that goes into socks, tights, undergarments, and other products. The yarn from this machine is considerably more valuable than the yarn that goes in—and Leesona gets a 6¢ per lb. royalty from users, since the process is patented.

The spindles on the Leesona stretch yarn machine revolve at more than 150,000 rpm. A new machine under development will spin its spindles at 350,000 rpm. At that speed, the tiny revolving steel tubes will be put under stress to the limit of their internal strength. That, as far as Robert Leeson, president of Leesona, knows, is as fast as anything in the world has been made to revolve.

Machines like this cost a great deal to develop, and because of the long product development cycle, it's a long time until they begin to pay off. Then, too, foreign machines show up to do the same job. Right now, Leesona is suing Whitin Machine Works and its French subsidiary for alleged patent infringement on stretch yarn machines.

IV. Who Does the Work

In only one area is life easier in the textile machinery business than in other capital equipment industries. Competition in the U.S. is fairly static, and the major manufacturers have ended up with overlapping but generally not directly competitive products. There are several divisions of effort. Here's how the leaders compare:

Draper Corp., Hopedale, Mass., makes single shuttle, or ordinary, looms. It is, for all intents and purposes, the only high-production company that makes looms of this type. The Textile Machinery Div. of Warner & Swasey Co., Cleveland, also produces a loom but so far has not been able to crack the market significantly. Draper's total sales were $51-million in 1959, and 81% of that was accounted for by textile machinery. Draper's net was $2-million after taxes. The company has already installed more than 8,000 of its shuttleless looms, and it has a good backlog of orders. Its monthly output of ordinary and shuttleless looms is about 1,000.

Crompton & Knowles Corp., Worcester, Mass., mostly makes fancy looms for producing patterned weaves—dobby looms, and Jacquard attachments. Its sales for 1959 were $22.8-million, of which textile machinery and parts accounted for $15-million.

Whitin Machine Works, Whitinsville, Mass., is the largest manufacturer of preparatory and spinning equipment. Whitin's sales last year were $49-million, of which textile machinery accounted for 80%.

Saco-Lowell Shops, Boston, also produces preparatory and spinning equipment. The company, which has moved

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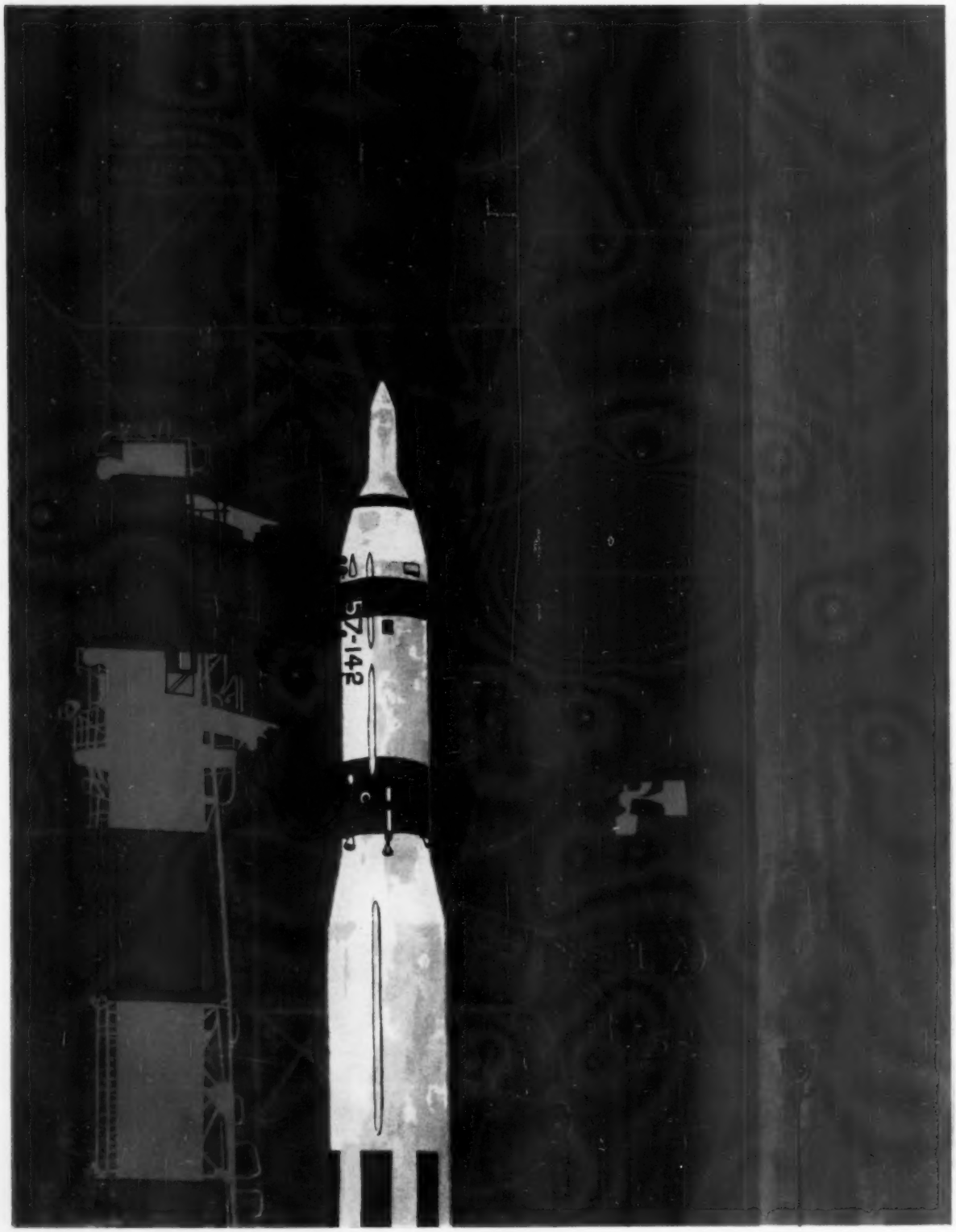

JAMES H. HUNTER, president of James Hunter Machine Co., displays new needling equipment.

all its plants from New England to the South, last year lost nearly $2-million on sales of $27.5-million. Textile machinery made up all but 20% of Saco Lowell's sales. The first quarter of 1960 saw a profit on Saco Lowell's books for the first time since 1955.

Leesona Corp., Providence, R. I., with sales of more than $18-million, produces many types of winding machines. Its Unifil automatic bobbin winder, an attachment for single shuttle looms, is an unqualified success. It has installed 50,000 of them, and has a potential market of fitting one to each of another 385,000 looms now in existence. The company introduced three new products at the Atlantic City show—a new yarn twister for glass fiber, a faster stretch yarn machine, and an automatic cone winder (picture, pages 88 and 89) that automatically finds, collects, and ties the ends of yarn if it breaks during winding. It claims its new winder operates at 90% efficiency compared to 60% for good manual machines, and it is twice as fast, besides.

James Hunter Machine Co., North Adams, Mass., produces preparatory equipment and non-woven fabric machines. Hunter, a closely held company, has sales in the area of $20-million. It is one of the few companies diversifying within textile machinery rather than in other industries.

These companies—with a few others such as Barber-Colman Co.; Proctor & Schwarts, Inc.; H. W. Butterworth & Sons Co., and Roberts Co.—account for about half of the sales of textile machinery to the U.S. market.

• **Few Newcomers**—From the looks of the market in the near future, the present lineup of companies will continue to have the market to themselves. Few new concerns showed up at the Textile Machinery Exhibition. Those that did were relatively small, such as Matrix Controls Co., a manufacturer of an electromechanical device to measure the width of fabric as it unrolls.

Few outside companies can compete with the textile machinery makers' talents in mechanical engineering. There is, however, probably a better chance in the electrical and electronic controls area, where textile machinery makers admit they are rather weak.

• **Old-Timers Diversify**—Most textile machinery makers themselves are desperately trying to diversify into other fields to counteract the rollercoaster ups and downs of sales.

• Whitin Machine recently purchased American Type Founders and entered the printing press business.

• Leesona is doing contract research in electronics and military systems as well as supplying coil winders to the electronics industry.

• Draper Corp., intensifying efforts to do outside work in its foundry, handles automotive parts business as well as an extensive business in chain saw components.

• Barber-Colman and Warner & Swasey both sell more machine tools than textile machinery.

• Saco-Lowell has an automotive parts division and produces gears and machinery for other industries.

• Crompton & Knowles has diversified into chemicals, by acquiring Althouse Chemical Co. It also makes packaging equipment and recently acquired the Carl M. Beetle Co., custom molders of reinforced plastics.

U.S. textile equipment manufacturers have traditionally exported about 25% of their products. But this market is gradually shrinking; Germany and Britain have taken over world leadership from the U.S. in textile machinery exports. To cope with this trend, almost every textile machinery maker has arrangements with overseas companies, ranging from licensing agreements to outright ownership.

• **Will They Buy?**—One question remains to be answered: Will the mill owners and operators buy the improved equipment they saw at Atlantic City?

Morris Bryan, Jr., president of Jefferson Mills, Jefferson, Ga., is one leader of the industry who thinks the answer is yes. He points out that past technological improvements have enabled textile men to hold the price line. He cites an industry expenditure of $4-billion for plant and equipment in the last 10 years, when it earned only $3.2-billion. "That $4-billion brought us up to the technological barriers of this show, and now they've been crossed," he says. If the industry is to keep pace technologically, he adds, it "will have to spend even more in the next 10 years." **END**

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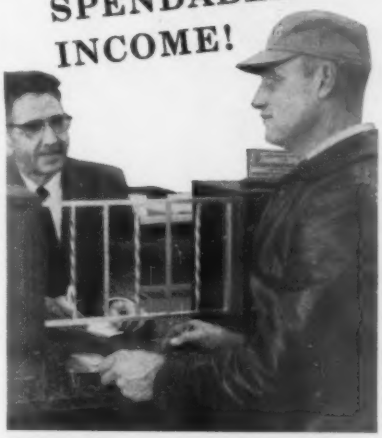

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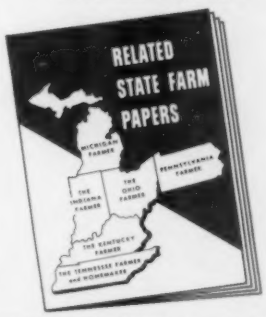

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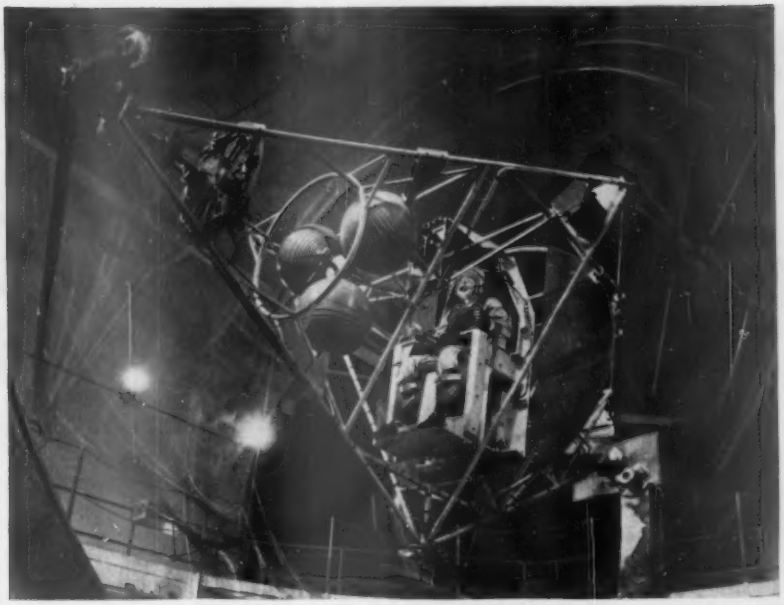

EQUILIBRIUM RIG (in action, left; at rest, above) tests man's reaction to space at NASA's Lewis Research Center. Setting it up was just part of . . .

How an Aircraft Lab Leaped Over to Space

Lewis center made the drastic switch smoothly, in a mere two and a half years. An old policy helped make it possible.

The picture at the left looks like a dollop of abstract art with a few faces superimposed. And the shot above might be a giant Tinker Toy.

Actually, they're portraits of an equilibrium rig—in action and at rest—at Cleveland's Lewis Research Center, one of the National Aeronautics & Space Administration's largest facilities for basic research. The whirling lights show an astronaut getting a foretaste of the jouncing around he would get in space.

Moving or still, the out-of-this-world rig symbolizes the immense change that has happened at Lewis within two and a half years, with the center's main emphasis switching abruptly from ordinary aeronautics to the problems of space and man-in-space.

• **Large Setup**—As industrial lab complexes go, Lewis is a massive thing. Its investment in real estate and equipment is $150-million; it is staffed by 2,700 people, 800 of them researchers.

Complete reorientation of that much plant and personnel is a really tricky job. Many a much smaller industrial research group has found it difficult—and sometimes impossible—to switch targets in a reasonably short period of time. Indeed, Eugene J. Manganiello, associate director at Lewis, admits that the original estimate was that the job at Lewis would take four years. But this week, only 30 months from the takeoff, the switch at Lewis was about complete—and with very little extra spending or loss of personnel.

Extra spending on a huge scale, of course, might have made things fairly easy. But the Lewis directors managed to get the whole physical job done without exceeding the center's average annual expenditure for growth—about $9-million. In fact, there has been surprisingly little visible change in the 300-acre sprawl of buildings. Instead, there was a great deal of successful adaptation of old facilities to new purposes.

• **Wind Tunnel**—Take the center's $6-million altitude wind tunnel, built during World War II to study the cooling problems of reciprocal engines operating at high altitudes. Since 1943, the design of wind tunnels has changed materially. The Lewis tunnel was converted some time ago from altitude testing to the simulation of close to Mach speeds—first for developing ramjets, and then turbojet engines. But there are clear limits to the successful conversion of wind tunnels to produce

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ION ENGINES may be the propulsion of the future for vehicles that have been blasted into space. Here Lewis technicians tinker with an experimental model.

different conditions. You can see that in the rush of aircraft companies to build new wind tunnels (BW—May28 '60,p96). At Lewis, new space research uses for the old wind tunnel were spotted. Now it serves as a giant vacuum chamber, for experimenting with equipment such as the Mercury capsule in which American man will make his first venture into space. The old tunnel, though it's not up to creating a "blow" of 3,800 to 4,000 mph., is quite capable of being evacuated to the degree of vacuum expected at the fringes of the earth's atmosphere. And a fine big vacuum chamber it makes.

• **Old Policy Helped**—Another factor that helped the swift conversion of Lewis was the long and sturdy refusal of its directors, in the past, to keep on digging in research fields where the fundamental work had been accomplished.

Late in 1956, almost a year before the first Sputnik was fired and two years before Lewis was transferred to NASA from its old job as a Flight Propulsion Laboratory for the National Advisory Committee for Aeronautics, the directors began to fret because all the basic problems of supersonic flight within the earth's atmosphere seemed to have been solved. Division heads were undecided on what field to tackle next. Missile research, in the U.S., was still largely a province of the military, and Lewis people were not sure they were ready to start in on outer space.

Long debate finally brought the center to a missile propulsion program that was elastic enough to permit a quick switch to space work if development in rocketry seemed to be moving fast enough.

• **Proof of the Pudding**—The wisdom and importance of this approach—being ready for new basic research—was amply proved by what happened in the science of rockets and missiles between 1956 and 1960.

In 1956, the mere switch from areonautical work to rockets and missiles looked drastic and advanced enough for even the science fiction devotee. But in the event, scientific developments far outran predictions—to the dismay of a number of leading aircraft companies that had looked ahead to rockets, and not much further.

Today, only developmental research remains to be done on first-generation rockets. Even in the new chemically propelled rocket systems, experts feel the developmental end may be in sight.

What's needed now is basic research with temperature, pressure, and physical phenomena beyond the earth's atmosphere; these are things that industry will have to know about before it can make the equipment for manned flight in space. And Lewis is ready to seek the answers. Because in 1956 its directors kept their goals broad, it has been able to convert to space research with a minimum of disruption.

Naturally, there were some hardships in the changeover. A great many people had to be trained all over again to investigate entirely new areas of science. Teams had to be broken up, new teams welded together, with an entirely different mix of training and background.

Lewis' already extensive training program eased the personnel task. Of the center's 2,700 employees, more than a third have had, or are having, some sort of advanced scientific training. Partly as a result of this, not one worker had to be fired during the changeover because he couldn't fit his aptitudes to the new assignment. Instead, every one got a chance, during the two-and-a-half-year adjustment, to take any additional training that was needed. The adjustment period made the difference: In an overnight, crash changeover, such on-the-job training is impossible and new staffs have to be shaped up as best they may in the rush.

The changeover at Lewis was fast,

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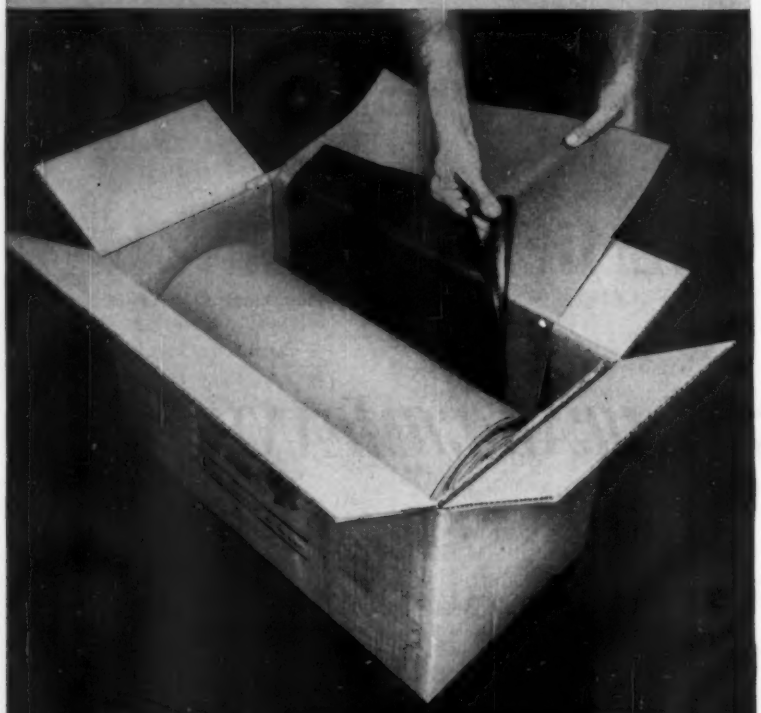

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but it wasn't a crash job. Broad outlines for the move had been prepared well in advance. Manganiello says it was "just a matter of making another 10-degree turn in a direction in which we were already heading."

• **Wide Range**—Now that the switch at Lewis is complete, it gives you a good picture of the range of talents that a major lab must have to compete in the race to hurl man into space.

Take the Materials & Structures Div. Its staff has had to go back to solid state physics finding how matter behaves in a solid state, in order to set up new rules for manufacturing materials to be used in space.

Such materials will have to withstand many rigors, among them radiation, sudden tremendous changes of temperature, and perhaps the bombardment of meteorites. Chemical and physical changes under extremes of pressure must be withstood.

Materials researchers have found the pace a demanding one in the development of the first-generation rockets; they will find it impossible in space work unless Lewis and other centers can come up with some of the still missing answers on the behavior of solid matter.

Others of the light research divisions at Lewis are advancing into far-scattered fields, too:

The Nuclear Reactor Div. is delving into heat transfer in nuclear power plants, and into the reaction of pumps, motors, and other components of a chemical rocket to the presence of a radioactive field set up by an upper-stage nuclear rocket engine.

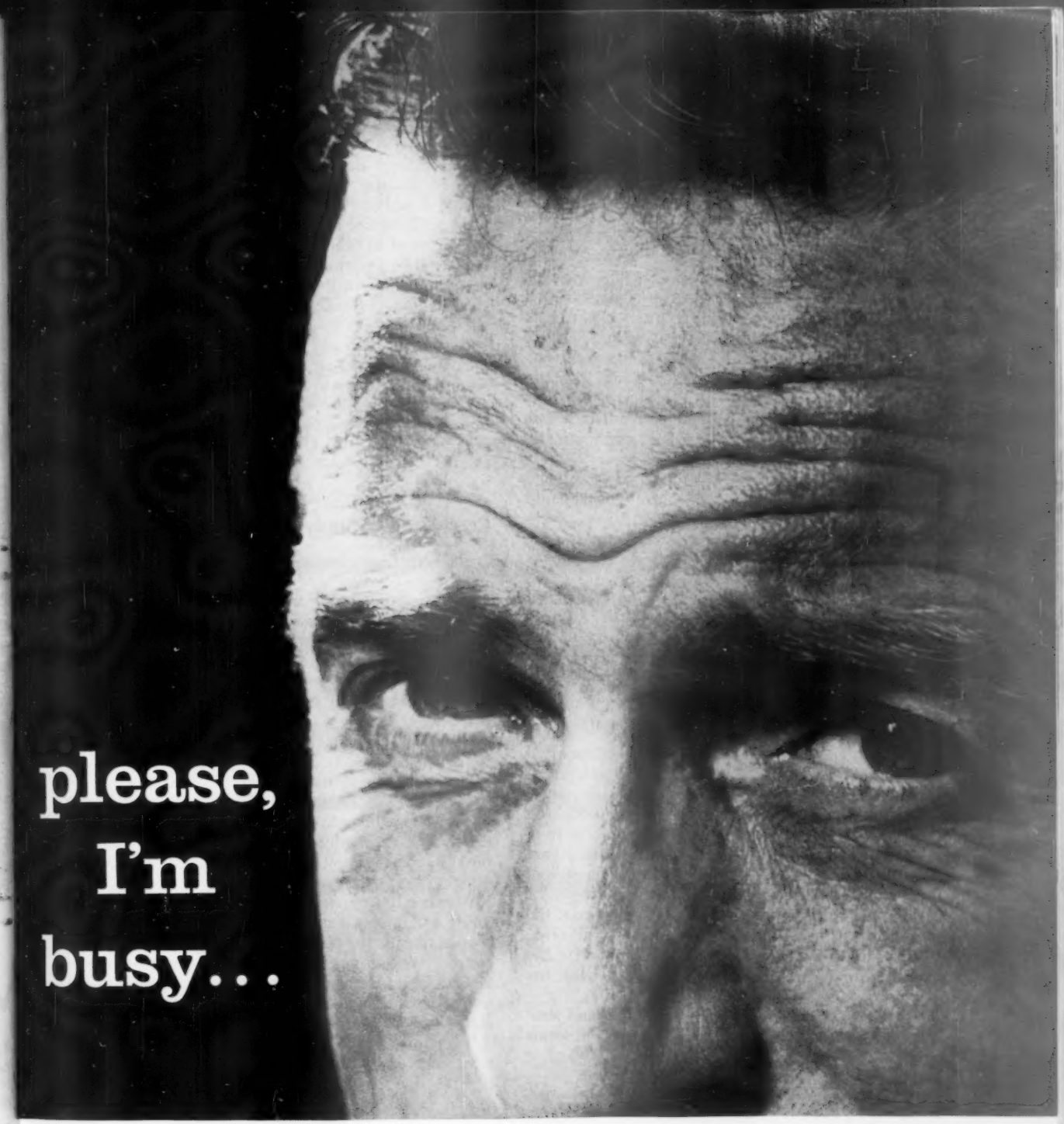
The Propulsion Aerodynamics Div., among other major projects, is tackling a phenomenon called "base heating." In the initial stages of firing a giant rocket engine, some of the hot exhaust gases contain unburned fuel. Once the rocket is airborne, this usually does little more than reduce the engine's over-all efficiency. But if enough fuel gets mixed with air, as sometimes happens, a dangerous fire can result. Basic work on combustion will be needed to clear up this still unexplained hazard.

The Advanced Propulsion Div. is making a major effort to develop new types of space engines. Ion engines (picture, page 100) and plasma jets are being studied from every angle.

The Fluid System Div. is trying to find out what happens to fluids under near-vacuum conditions.

The Propulsion Chemistry Div. is seeking new methods of obtaining electricity directly from heat.

Over-all, Manganiello says that about 73% of the work now being done at Lewis is on space and spacecraft. That's a long jump from 1956, when 60% of the work was on the now-prosaic problems of airbreathing engines for manned aircraft. END



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WESTERN UNION

In Research

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Automatic Device for Measuring Color Is More Accurate Than the Human Eye

An automatic method of measuring color is undergoing extensive testing by the U. S. Army Quartermaster Corps, the world's largest buyer of textiles. Color measurements have long been made visually under standard lights by specialists called "color shaders," because available instruments are not rapid or exact enough to make the required measurements. **The new device not only correlates with visual judgment, but also provides data in exact figures that can be recorded and duplicated for subsequent study.**

Based on a color-measuring meter invented by Richard S. Hunter, formerly of the National Bureau of Standards, the new device was developed by Macbeth Corp., Newburgh, N. Y., and Hunter Associates Laboratory, Inc., McLean, Va., under a Quartermaster Research & Engineering Command contract.

• • •

Steroid Compound With No Side Effects Promises Cures for Many Diseases

Schering Corp. has produced a medically active steroid compound that has no side effects on the metabolism of animals. The breakthrough may lead to the development of steroid hormones that can be used safely for treatment of diseases ranging from cancer to atherosclerosis.

Ever since the synthesis of cortisone (the first commercially produced steroid) a decade ago, **scientists have been trying to rearrange the atoms of the various steroid molecules to develop new and more efficient drugs.**

To some degree, they have succeeded. But even the newest steroid drugs have had undesirable and often dangerous side effects. As long as these drugs were the product of rearrangement, doctors had to deal with the disadvantages as best they could.

The synthesis of an active anti-inflammatory and anti-allergic steroid that doesn't upset body metabolism seems to have broken this logjam.

• • •

North American Aviation Will Build Reflector for Largest Radio Telescope

North American Aviation, Inc., has received a $9.1-million contract to fabricate the aluminum "dish" for the world's largest radio telescope at Sugar Grove, W. Va. (BW—Feb.13'60,p82). The "dish," or reflector, will be 600 ft. in diameter across the top, and will have a concave surface of more than seven acres.

W. H. Yahn, president of North American's Columbus Div.—which will assemble the telescopic reflector—says that **the contract award is part of his company's bid for diversification into other-than-aircraft government business.** The Sugar Grove radio telescope, when completed in 1962, will be operated by the Naval Research Laboratories.

The project may be the springboard to a whole new line of business for North American. The company already is bidding for other construction awards—among them a 120-ft. navigation antenna.

Compared to other radio telescopes, the Sugar Grove scope will be a gigantic construction undertaking. Standing upon its tower, the "dish" will rise higher than a 60-story building. It will revolve upon a track in a complete circle and tilt up and down from zero to 90 degrees.

Researchers will train the telescope on some of the phenomena in space. But the big "ear" has important potential military uses, too. Navy refuses to discuss this part of its plans, but there is little doubt that by the mid-60s the Sugar Grove installation will form an important link in the U.S. worldwide military defense system.

• • •

Coordinated Study of Plasmas To Hunt First for a Yardstick

To meet the rapidly increasing needs of space scientists and the military for basic information on the behavior of hot gases and plasmas, the National Bureau of Standards has established a special research program to unify and strengthen its activities in the field.

Need for such an intense study of plasmas—the so-called fourth state of matter—was clearly revealed at a symposium in Boulder, Colo., earlier this year (BW—Mar.19'60,p77).

Consolidation of research effort is uncommonly difficult because of the number of different scientific disciplines that are brought to bear in plasma research: gaseous electronics, astro-physics, atomic physics, microwave physics, spectroscopy, statistical mechanicals, chemical physics, and hydromagnetics.

Another big problem is the lack of scientific definitions of plasmas. Temperature parameters can't be used to describe them, because plasmas are often not in a state of equilibrium. Other qualities, such as pressure, density, and electrical conductivity are likewise of little use as measuring sticks when a plasma departs from a state of local thermodynamic equilibrium.

Therefore, one of NBS's first projects will be to set up a meaningful set of measurement standards for plasmas.

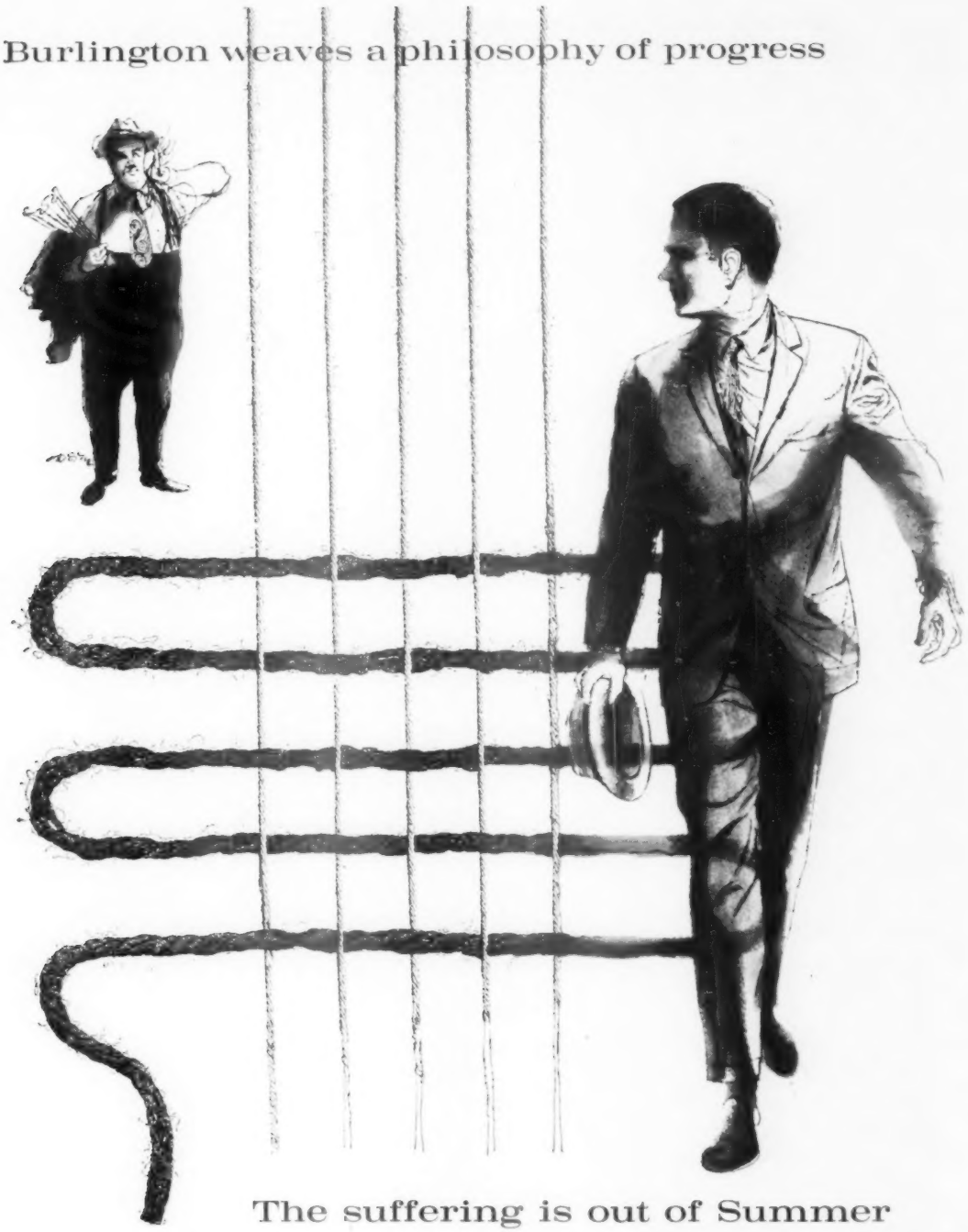
• • •

Chicago Gets New Cancer Instrument

The University of Chicago announced this week the installation of a new microwave linear accelerator, said to give "the greatest degree of control ever achieved over the penetration of high-energy rays in medical use." Built with AEC funds, the $450,000, 25-ton machine is on campus in the Argonne Cancer Research Hospital.

According to Dr. Lowell T. Coggeshall, dean of the University's division of biological sciences, it gives medicine for the first time "a high-energy particle instrument that can both guide and rotate the beam over the cancer treatment area."

Burlington weaves a philosophy of progress



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INTERNATIONAL OUTLOOK

BUSINESS WEEK
JUNE 4, 1960

The Western powers **this week began to strengthen their alliances** for the long pull in the post-Paris period of East-West tension.

In the U. S., Asia is getting close attention. The White House this week confirmed earlier reports (BW—May28'60,p159) that Pres. Eisenhower will visit the Philippines and Taiwan (Formosa), in addition to Japan and Korea, during his swing through the western Pacific defense perimeter.

At the meeting of the Southeast Asia Treaty Organization (SEATO) in Washington this week, delegates emphasized the threat from Communist China. Vice-Pres. Nixon even paid Soviet Premier Khrushchev a backhanded compliment by saying that the Red Chinese push a more Stalinist and more bitter line against the West.

In two U. S. allies, Japan and Korea, political unrest continues.

The Japanese are stalemated over ratification of the U. S.-Japan mutual security treaty. At midweek, Socialist members of the Diet threatened to resign. They are trying to force Prime Minister Kishi, who pushed through the treaty ratification, to step down and call general elections.

Kishi is also getting pressure from political opportunists within his own party. And the business community is concerned that the political fracas will have unpleasant economic consequences, which so far have been slight. But Kishi is adamant and is not likely to resign until after Pres. Eisenhower has come and gone.

Across the Sea of Japan, **South Korea's purge of those who participated in the Rhee regime's corruption may be getting out of hand.** It seems that hardly anyone above the level of petty clerk or junior military officer was not implicated in one way or another during the 12-year Rhee rule. Getting rid of them all would leave the Korean government and the Army short of trained officials.

Acting Pres. Huh Chung hoped to halt an all-out purge by hustling ex-Pres. Syngman Rhee into exile in Hawaii this week. But Rhee's flight may set off a new round of investigations.

On the other side of the fence, Soviet Russia is trying to patch things up with Communist China. Khrushchev has hinted that Red China should be included in any future summit meeting. For the past year, Moscow and Peking have had differences over the approach that Communism should take toward the West. The Khrushchev school has been to emphasize economic competition, while Chinese Communist leader Mao Tse-tung prefers military threats.

But the **Chinese are still flaunting their independence of Russia.** This week, Chinese Premier Chou En-lai visited Outer Mongolia, a buffer state that has always been torn between Russia and China, and signed a $50-million assistance pact with the Mongols. Chou undoubtedly conferred with Soviet ex-Foreign Minister Molotov, who was shipped out as ambassador to Outer Mongolia for his marked Stalinist views.

—•—

The U. S. seems to be moving toward closer military ties with its European allies—especially Britain and France. For one thing, Washington will agree informally to consult more frequently and closely at all

levels. And higher priority consideration is being given to proposals for tightening consultative machinery within NATO and for providing the European allies with a somewhat more independent nuclear deterrent.

The U.S. still opposes, however, the U.S., British, French directorate proposed by Gen. de Gaulle to coordinate, within NATO, Big Three policies throughout the world. The fear is that this would tend to limit U.S. freedom of action in parts of the world where the U.S. has special security responsibilities. It also would offend allies left out of the circle.

Since the summit's collapse, the U.S. has reduced—slightly, at any rate—its opposition to wider sharing of military atomic knowhow with its allies. Washington was cool to the idea when hopes were high for an early conclusion of a test ban treaty.

Continuing doubts in Washington about French political stability will tend to slow decisions on nuclear cooperation, though. De Gaulle is respected and trusted. It's a question of his successors.

—•—

The continuing Algerian war, of course, is the main threat to French political stability. Now that de Gaulle's efforts to reach a settlement with the rebels have failed, he is pinning his hopes on developing moderate Moslem leaders with whom he can come to terms.

Elections to Algerian local councils this week were a qualified success for de Gaulle, but emergence of effective moderate Algerian leadership still seems a long way off. Still, the elections apparently were free, and more Moslems voted than in other recent elections—despite intimidation from the rebels.

—•—

When the U.S. and Canada sit down with all the European countries to discuss trade problems next week, **Britain is expected to say how far it is willing to go to reach some accommodation with the Common Market countries.**

Talk in London of tightening British relations with Euratom and the Coal and Steel Community is considered a sign that the British are now ready to negotiate realistically with the Common Market on specific trade issues and to drop "ideological" opposition to the Six's acceleration program.

—•—

For the world at large, last week's coup in Turkey has heady implications. It means more than victory for democratic ideas. It fits into a growing pattern of unrest in the world.

Before Turkey, there was Korea. And the list of overthrown governments goes back further yet: Argentina, Venezuela, Cuba, Iraq.

True, the Communists often have had a hand in it. But they have had troubles of their own when the spirit of revolt was awakened. Look at Hungary, Poland, East Germany. The will to fight iron-fist rule has crossed national borders almost everywhere.

Whatever other elements are involved in individual cases, students usually have had a major role in all the uprisings. The military is often a key.

The pattern of revolt you see today smacks, in a sense, of 1848, when libertarian ideas fostered in universities shook European traditionalism and toppled governments.

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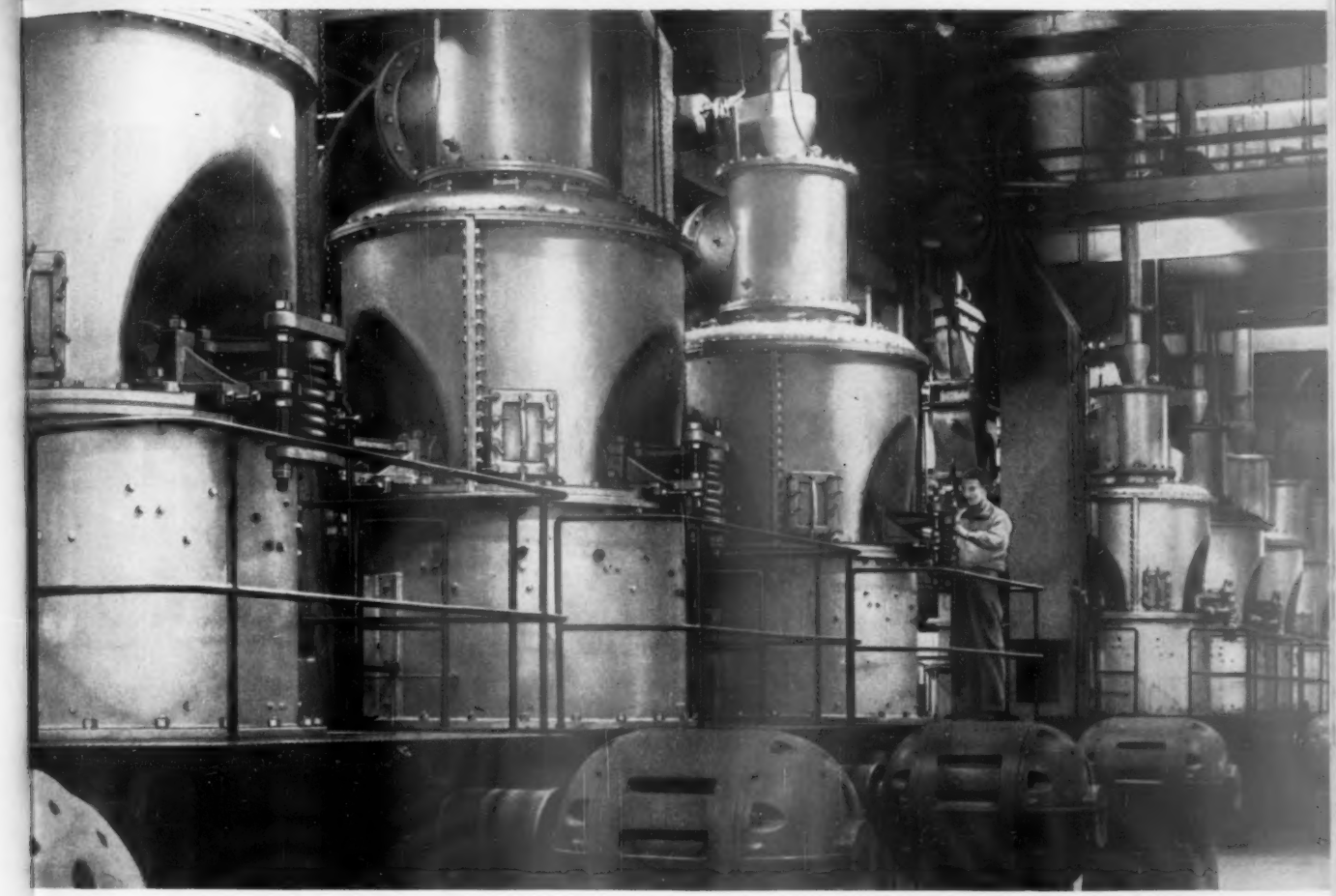

Grinding mountains into microns is the business of the Bowl Mill

In the power generation field, coal is still king. Pulverized to the fineness of flour, it fires the furnaces of the world's power plants where its heat energy is used to generate the bulk of the world's electric power.

The power plant is king coal's castle—and one of its most respected residents is the C-E Raymond Bowl Mill. Each day, in power plants throughout the world, it converts about 900,000 tons of lump size coal—a literal mountain—into a fuel of micron size and spews it in steady streams into the furnaces it serves.

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The Bowl Mill is an example of Creative Engineering—the C-E approach to providing the most advanced designs of boilers and fuel burning equipment for all fuels and steam requirements—from those of small industrial and institutional plants to the largest required in modern utility power practice.

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Agricultural Development Division:
Compiles and disseminates full details on Kentucky's special agricultural opportunities.

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Devotes itself exclusively to helping Kentucky cities and towns to get organized and prepared for industry.

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Provides professional assistance to local planning and zoning commissions.

If you are considering a new plant, we urge you to enlist the services of The Kentucky Team and the Kentucky Department of Economic Development. *We believe you will be amazed at the results this combined task force can show you.*

Address: Lt. Gov. Wilson W. Wyatt or W. E. Kennedy, *Commissioner*
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300 Capitol Bldg., Frankfort, Ky.

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COMMONWEALTH OF
KENTUCKY
WHERE BIG THINGS ARE HAPPENING

In the Markets

• • •

Stocks Resume Split Personality, With Majority Slow, Glamor Issues Up

The stock market marked time this week although some electronics issues scored handsome gains. In a sense, investors seem to be reverting to their pre-summit pattern of making a sharp distinction between the great majority of issues, which are not in demand, and a few glamorous stocks that are being bid up to extremely high levels. **This situation has resulted in two markets that bear little relation to each other.**

But sooner or later the two markets should come closer together, either by the bulk of issues moving up or the growth stocks moving down. While the growth stocks are now selling at levels that make them vulnerable to a sell-off, most analysts think that better business news should bring a rise in the prices of cyclical issues, particularly the steels.

The utilities are also in a market of their own, with many selling at new highs—a sign both of investor caution and of confidence in the growth pattern of the utility industry. Actually, many utilities have had a growth rate comparable to that of many favored industrials, but they are receiving market recognition only in the past few months.

Any real change in the market is not likely until investors get over their present indecision about the future economic outlook. Wall Street is worried about the rate of steel production, which is expected to fall below 60% of capacity, and by other signs of a readjustment in the economy. Thus, **it is quite probable that the market will continue along its present narrow trading range until a turnup—or turndown—in the economy becomes apparent.** When that happens, the market may well have a vigorous reaction, and most analysts are betting that it will be on the upside rather than the down.

• • •

SEC Suspends Reynolds & Co. In Windup of Prolonged Case

Reynolds & Co., a big New York brokerage house with a nationwide network of branch offices, was suspended last week for 30 days from the National Assn. of Securities Dealers by the Securities & Exchange Commission. **Reynolds consented to the action, but according to Robert M. Gardiner, managing partner, this was "solely in order to bring to a close more than three years of costly and prolonged investigations and hearings."** He also pointed out that employees directly involved in the scandal had long since been fired by the firm.

The action means that Reynolds will be barred from underwriting during the 30-day period, and won't be eligible for the discount on securities available to NASD members. **This should sharply reduce Reynolds' over-the-counter trading,** and will add to the $1.3-million in commission business that Reynolds says it has lost in the year and a half since the charges were first made public. **However, Reynolds' trading on the New York Stock Exchange won't be affected.**

The suspension grew out of **charges on churning customers' accounts, fraud, violations of the margin rules at Reynolds offices, and "misappropriation" of customers' funds** in California, Minnesota and Illinois (BW—Feb.21 '59,p114). According to SEC, there was "gross overtrading" in the California offices. In one case, that of "Mrs. D, a widow and semi-retired real estate broker," an average investment of $57,310 was turned over 29 times in 46 months, with purchases and sales each totaling over $1.6-million. SEC concluded that "the lack of supervision . . . was of so grave a nature that it is appropriate in the public interest and for the protection of investors to suspend [Reynolds]."

• • •

California's New Flexible Policy Still Adds Up to Big Bond Issues

In line with its new flexible policy for marketing issues of long-term bonds, the state of California this week announced plans for the sale of $93-million in bonds on June 28. **A spokesman denied that the large sum meant the state was reverting to its old policy of borrowing some $100-million four times a year. "Any Wall Street interpretation to that effect is wrong," he said.**

California abandoned its old policy in April, decided instead to go to market at varying times for varying amounts in hopes of cutting its interest costs. It borrowed $25-million on Apr. 19, at the lowest net interest cost to the state since March, 1959. It rejected bids on a $50-million issue two weeks ago, and now plans the $93-million sale. In the next six months, moreover, California voters will be deciding on close to $2-billion in new bond proposals.

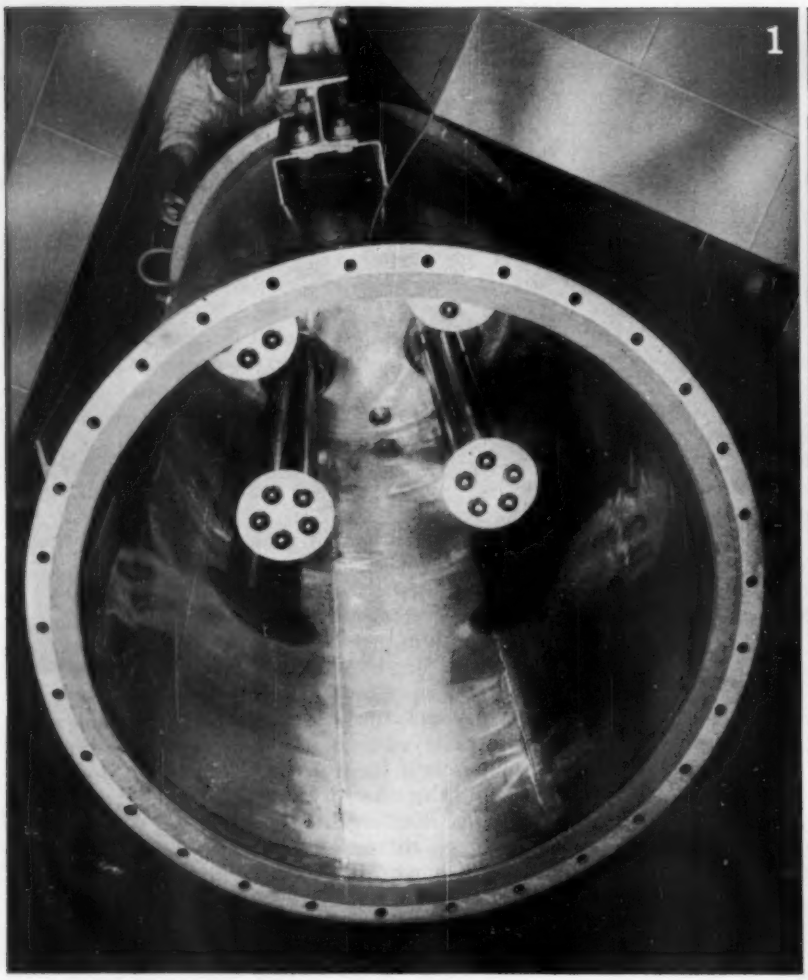
• • •

Japan Eases Rules on U.S. Investment As Part of Drive to Woo New Capital

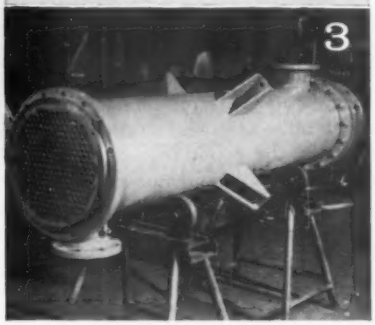
The Japanese government has put through a general liberalization of rules governing U.S. individual and corporate investment—the first such step since 1952. The move was not unexpected, since it is in line with a broad drive by the Kishi government to woo new capital (BW—Apr.30'60,p60); it also coincides with a current visit of top U.S. financial men to Japan. A relaxation of trade and foreign exchange controls may follow.

The new regulations cover a broad investment area. For one thing, they permit an increase in the proportion of foreign equity ownership allowed in Japanese companies—from the present 5%-to-8% to 10%-to-15%.

There's also some easing of the rules covering repatriation of securities proceeds. At present, U.S. investors in Japanese equities must wait two years before any capital can be repatriated, and then can get back only 20% annually. Under the new regulations, the two-year initial period still holds, but one-third can be repatriated immediately after this time, the remainder within two years.



FLUIDICS AT WORK



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3. Foul-free heat exchangers—to several hundred square feet in area, like this *titanium* chlorine cooler.

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Ways to profit. With these "wonder metals" now available to fight corrosion, products and processes heretofore considered impractical are now a reality.

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FLUIDICS and you. Combatting the high cost of corrosion is one of the many activities covered by Fluidics, the Pfaudler Permutit program that helps industries handle liquids and gases more profitably.

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The Munitions Makers–and What Investors Think of Them

COMPANY	DEFENSE DEPT. CONTRACT AWARDS—FISCAL 1959 (Millions of Dollars)	TOTAL COMPANY SALES* (Millions of Dollars)	NET INCOME PER SHARE*	RECENT PRICE	PRICE-EARNINGS RATIO
General Dynamics	$1,616.4	$1,811.9	$3.12	44	14
Boeing Airplane	1,166.5	1,612.2	1.65	27	16
North Amer. Aviation	1,081.1	1,044.9	3.80	36	9
General Electric	914.0	4,349.5	3.19	89	28
Lockheed Aircraft	898.5	1,302.0	1.24	22	18
Douglas Aircraft	676.4	883.9	D8.86	30	—
United Aircraft	538.2	1,082.1	4.26	38	9
Martin	524.0	523.7	4.34	44	10
Hughes Aircraft	494.0	NA	NA	NA	NA
Amer. Tel. & Tel.	476.5	7,393.0	5.22	88	17
McDonnell Aircraft	403.5	435.9	3.05	22	7
Sperry Rand	403.2	1,173.1	1.30	24	18
Raytheon	392.6	494.3	3.89	44	11
Chrysler	323.2	2,643.0	D .62	45	—
Grumman Aircraft	300.2	289.0	2.24	28	13
Republic Aviation	280.5	198.1	2.37	27	11
In'tl Bus. Mach.	276.9	1,309.8	7.97	491	62
Bendix	271.3	689.7	5.37	69	13
Westinghouse	238.0	1,910.7	2.43	58	24
General Motors	210.7	11,233.1	3.06	44	14

Data: Dept. of Defense, BUSINESS WEEK. D—Deficit NA—Not Available *Based on latest fiscal year ©BUSINESS WEEK

Investors Cautious on Defense

Investors have been reacting with surprising calm to all the fuss Khrushchev stirred up in Paris–and to talk that Democrats in Congress will tack $2-billion or more onto the Defense Dept. budget.

This week, the Dow-Jones average was at 626–up only slightly from about where it was before the summit talks. And most defense stocks, which got a big boost when the talks collapsed, have lost a good part of their price gains. In fact, investor sentiment toward defense stocks has shifted markedly since the beginning of the year. Shares of most of the major defense contractors are now selling well below their 1959 highs. Even the most popular of the Pentagon's suppliers–Thiokol Chemical, for one–were unable to stage a sustained rally after the summit debacle.

• **Up, Then Down**–A long list of defense-oriented issues, from Aerojet-General and Bendix to Raytheon and United Aircraft, did show sharp one-week gains ranging from 5 to 14 points. But after the shouting died down, they were still well below their old highs. Moreover, speculators seemed somewhat less enthusiastic about bidding up those defense stocks that qualify as "space age" favorites.

As the table above shows, most of the really large defense contractors now sell at low price-earnings ratios, and in some cases the price is low enough to give a dividend yield of more than 5%. There are exceptions with high P-E ratios–companies such as General Electric, IBM, Westinghouse, and Sperry Rand–but these all get most of their income from civilian sources.

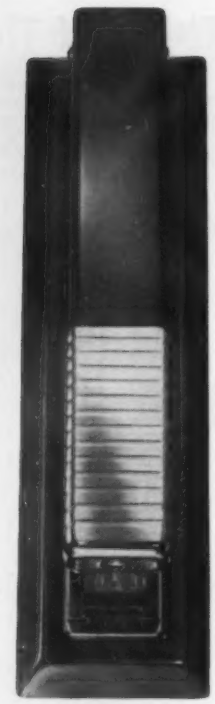
• **Earlier Skepticism**–This isn't the first time that investors have had second thoughts about the defense stocks. Before Korea, they were never really regarded as suitable for long-term investment, according to A. J. Catapano, who watches the defense group for Merrill Lynch, Pierce, Fenner & Smith, Inc. But with Korea and a rise in defense spending, investors started buying shares of the major munitions makers.

From mid-1953 to the end of 1956, Catapano says, aircraft stocks were in a bull market of their own that went up three times more than the general market. But beginning with the stretch-out of defense expenditures in 1957, the trend reversed itself; both aircraft and electronic stocks slipped badly.

• **Sputnik's Impact**–Then, with the launching of the first Sputnik in the fall of 1957, a real rush into defense shares began. Investors snapped up manufacturers of airframes and electronic gear for the military. Through the great 1958-59 bull market the electronics companies–which sell a major part of their output to the armed forces–outperformed every other important stock group, with an increase three times bigger than that of the market as a whole.

One highlight was an offering of 1-million shares of Transitron Electronic Corp. last December. Investors paid $36 a share for Transitron–better than 30 times the earnings expected this year. Since then, Transitron has sold as high as $52; it currently trades at about $49.

• **Turnaround**–But since the beginning of 1960, defense shares have been hard hit. This was due partly to what William McC. Martin, chairman of the Federal Reserve Board, called "liquidation of inflation psychology," partly to



STRIKING

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widespread feeling that the thaw in the cold war would eventually lower defense spending.

This change affected the entire defense list—including the glamorous electronics group. Compared with last January, Thiokol, at about $41, is 20 points below its high; Marquardt Corp. ($23) is selling at little more than half its price then; Lockheed ($22) is off about 10 points, partly because of troubles with its civilian Electra plane.

• **New Crisis**—This time, cutbacks in defense spending aren't to blame. Selective speedups are considered likely in crucial programs and some specialties, such as infrared and cryogenics. But analysts say investors are beginning to look much more critically at the profitability of large-scale defense spending. As a result, they are not buying blindly on word of a Pentagon contract award.

Profit margins in defense contracting have always been notoriously low. Goodbody & Co. says they average under 2% of sales (after taxes) in research and development projects. In production contracts, they run somewhat higher—from 4% to 5%. But there's always the threat that Washington will decide too much money is being made and renegotiate.

• **For Safety, Diversify**—Many major defense contractors have recognized the need to diversify into civilian activities that will cushion profits against contract cancellations and other hazards. For instance, General Dynamics last year merged with Material Service Corp., a large Chicago-based building supply outfit. Analysts estimate that Material Service accounts for 20% to 25% of GD's net income, though it brings in only about 7% of over-all sales. Frank Pace, Jr., GD's chairman, calls this merger "a long stride toward meeting the goal of balancing earnings from commercial ventures with earnings from "defense" and adds that further steps are to be expected "through acquisition if it is available to us."

Other defense companies are on the same trail. Lockheed has a 22.4% stake in Pacific Finance Corp. that last year gave it $774,000 in dividends—equivalent to a 14.2% return on its investment. Recently it bought Puget Sound Bridge & Dry Dock Co., which draws more than half its business from civilian sources. In addition, Lockheed has branched out of its traditional bailiwick—airframes—into military electronics. And Grumman Aircraft, which earned only 1.7% on sales in 1959, is building small boats and truck bodies.

• **Wait and See**—Despite these moves to build profitability, the attitude of many Wall Street analysts about buying these stocks is still "wait and see." One investment advisory service, Argus Research Corp., says that "the more or less indiscriminate strength that has come to some of the aircraft, missile, and space issues . . . might be looked upon as an opportunity to switch out of some of the issues in this group, where prospects of more defense business seem unlikely to offset various negative factors."

On its "sell" list, Argus has Boeing, Chance Vought, Douglas, General Dynamics, Lockheed, Marquardt, and Raytheon. "We would look with more favor," says Argus "on Aerojet-General, Martin, North American, and Thiokol." But, it recommends "a degree of caution . . . in chasing these issues."

• **Bouncier View**—Not all Wall Street soothsayers are this conservative. "There's still plenty of sex left," says a senior analyst at a big wire house. He points to Ginannini Controls (trading at 57), Cubic (62), and Loral Electronics (59) as examples of smaller electronics companies with big military business that are hot favorites. "Too much emphasis is being put on the troubles of a few airframe manufacturers," he adds. "There's plenty of gold to be had in the Pentagon; you just have to know where to look."

Dean Witter & Co. takes a somewhat similar slant. The big San Francisco investment banking house feels that the summit collapse could revive or accelerate three important programs:

• The Army's Nike-Zeus anti-missile missile. This would benefit Douglas Aircraft—as would an increase in procurement of Military Air Transport Service planes.

• The Navy's nuclear-powered carriers and nuclear-powered, missile-launching cruisers and submarines.

• The Air Force's B-70—the heavy bomber designed to fly more than 2,000 mph., which could be a prototype for a supersonic commercial airliner. North American, hard hit by cancellation of B-70 development last year, would be boosted by its reinstatement.

• **Other Pets**—Dean Witter also points out that ICBM, satellite, and space programs are "almost certain to be accelerated." It continues: "These projects have already been increased 30% in the fiscal 1961 budget to $4.2-billion. . . . Though it is far too early to make any estimate of the impact of additional funding for these programs on any individual company, the major participants clearly appear favored." Witter names General Dynamics, Martin, Lockheed, Boeing, McDonnell, and North American.

Between the pessimists and the optimists, there's a clear division of opinion in the stock market over the merits of investing in defense. So far, with many of the leading munitions makers slumping far below 1960 highs, the response of investors has plainly been cautious. **END**

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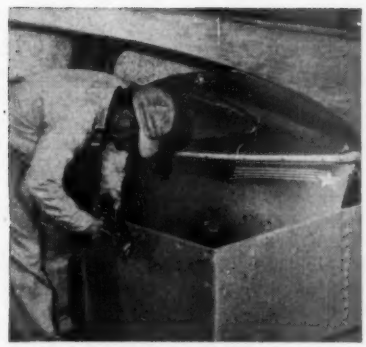

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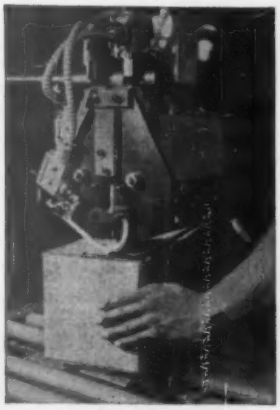

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Wall St. Talks . . .

. . . about Curtiss-Wright, expansion by New York City banks, central banking study.

Insiders say that **T. Roland Berner,** who engineered Roy T. Hurley's ouster as chairman and president of Curtiss-Wright Corp. and took over the chairmanship himself, plans to resuscitate the company on his own hook. He will not appoint a president until this primary job is completed, which may "take a year or two."

The New York Stock Exchange is still harping at its members to watch out for market operators who order securities for which they don't intend to pay. NYSE says that members should get "adequate references" and check them carefully before "large orders for new customers are accepted and entered."

Immediate expansion moves by New York City banks are expected when New York's new banking law, permitting **them to go to the suburbs,** goes into effect July 1. The banks had said they would take their time before making any **suburban** bank acquisitions or mergers, **but suburban** bank moves have got everyone in the race.

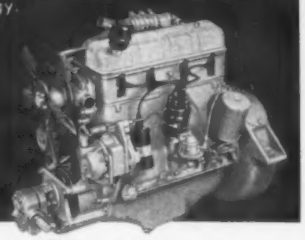
Richard L. Rosenthal, whose Utilities & Industries Corp. has some $31.6-million on hand for diversification, quickly scotched rumors that his first acquisition might be Mallinckrodt Chemical Works. Rosenthal admits that U&L has close to 10,000 Mallinckrodt "A" nonvoting shares. But he says these represent a "temporary investment only."

The Federal Reserve is readying a document that it hopes will stand as the **definitive work on central banking.** The study, which was prompted by a questionnaire sent by the Commission of Money & Credit will probably be out late this year.

An aggressive Boston-based investment group, B. C. Morton, is moving deeper into the mutual fund industry. Its business as a savings and loan broker tailed off after the Federal Home Loan Bank Board limited the amount of brokered loans an S&L could hold. It's expected that Morton soon will become co-underwriter of the shares of Peoples Securities Corp., a $6-million growth stock fund. Morton also has acquired an equity interest in A. S. Karasick & Co., Peoples Securities' investment managers.

..power

The three new Allis-Chalmers F series lift trucks shown at the left are driven by a new POWER-CRATER engine built by Allis-Chalmers. The unique crater-shaped piston head sets up violent swirling turbulence, thoroughly mixing fuel and air. Because of this proper mixing, a higher percentage of fuel is transformed into useful energy.



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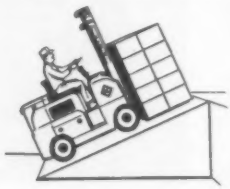

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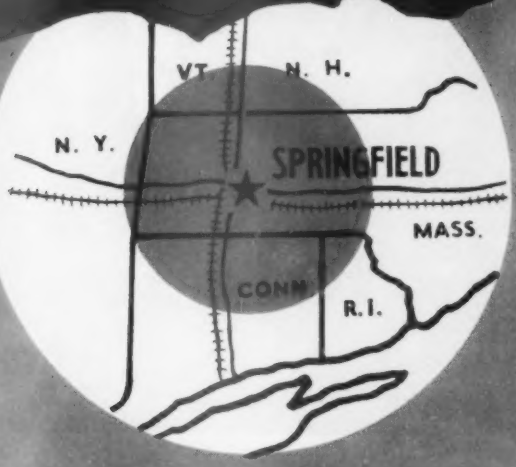

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NEW CONCEPTS IN PRACTICAL OFFICE AUTOMATION

In Washington

• • •

New Census Bureau Figures Revise Previous Estimates of Housing Starts

On the basis of new Census Bureau estimates, the Commerce Dept. reported this week that nonfarm housing starts for the first four months of this year have fallen 21.5% behind starts for the same period last year. Previous computations had put the decline at 17.6%.

A Census Bureau revision of the old statistical series on housing starts—in the works for some time (BW—Jan.23'60,p20)—increases last year's nonfarm starts by 152,400 units to a revised total of 1,530,900. This is a step-up of 11% over the previous estimate of 1,378,500 for 1959. **Much of the increase reflects better field data obtained by the Census Bureau since it took over the housing series last July. But part of the rise results from a redefinition of housing units.**

For the first four months of 1959, the revised statistics increase housing starts by 36,200 to 480,900. This year, for the January-April period, the revision adds 16,300 starts to 377,300.

Improved field data were available in making the previously reported estimates of starts for the first four months of this year. That means that the increase of 16,300 starts for the period can be attributed to the new definition of a housing unit and to more complete coverage of construction formerly excluded. **A housing unit as now defined is a single room or group of rooms intended for occupancy by a family, a group of unrelated persons, or a person living alone.**

This definition does not include group quarters, such as dormitories, nurses' homes, and rooming houses, nor does it include transient accommodations.

The new Census Bureau series on housing also provides figures on new farm homes. For 1959, estimated farm home starts add 28,200 units to the nonfarm total, for a gross national figure of 1,553,100. This total is 174,600, or nearly 13%, higher than the old 1959 nonfarm estimate.

More complete coverage based on better data accounts for most of the difference between the old and new series, the Census Bureau says. Of the 13% over-all increase in last year's total, for example, bureau officials estimate that only about 2½% reflects changes in definition.

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FCC Gives Up Hope of Getting Military To Give Up Some VHF TV Channels

The Federal Communications Commission has just about written off chances of getting any VHF television channels away from the military for establishment of more civilian stations. FCC has offered to swap some unused UHF channels.

Negotiations between FCC and the Pentagon have reached a stalemate, and a report expected within the next few weeks will end the effort. FCC Chmn. Frederick C. Ford recently told a Senate subcommittee the outlook was "bleak." **And last week Adm. Arleigh Burke, Chief of Naval Operations, said shifting of military radio-TV frequencies would be expensive in terms of new equipment and "a blow to defense readiness."**

Failure of the negotiations will spur other efforts to expand civilian TV. The Senate will consider legislation requiring all new TV sets to be equipped to receive UHF broadcasts as well as VHF as a spur to new TV stations in the higher bands. A renewed effort also can be expected on squeezing new stations into cities with only one or two TV stations by reducing the mileage separation between stations.

The report to be issued by the negotiating committee may include estimates of how much new equipment would be needed to effectuate a channel swap and what the cost to the taxpayer would be.

• • •

North American Aviation Selected By NASA to Develop Rocket Engine

The National Aeronautics & Space Administration this week selected North American Aviation's Rocketdyne Div. over four other companies to develop a new 200,000-lb. thrust rocket engine.

It is estimated that it will take about three years to develop the engine at a cost of about $44-million. Some $8-million is programed for the project in the 1961 budget.

The liquid hydrogen fueled rockets will be clustered in two and four combinations as upper stages for the big 1.5-million-lb. thrust Saturn engine. They will make it possible to put 20-ton payloads in earth orbits or send 9- to 10-ton loads to the moon.

• • •

Post Office Plans to Restrict Size and Shape of Mail It Handles

Starting the end of next year, the Post Office will refuse to handle some shapes of envelopes in first- and third-class mail. The restrictions are necessary because of the increasing mechanization of Post Office operations.

The long lead-time before the proposed rules go into effect will give envelope makers and large-volume users time to adjust.

Here's what the rules call for on first- and third-class mail:

- Minimum size mail that will be accepted is 3 in. by 4.25 in.
- All envelopes must be rectangular, with a length-width ratio of 1.414 to 1 or more. (Squares, octagons, and irregular shapes are out, for instance, but long slim-jim shapes are fine.)

In addition, **third-class mailers will be prohibited from putting envelopes with unsealed edges into the mail.** This would affect double postcards, many of which are now stapled or bound only at one edge, and some users have objected to the rule.

Once these first regulations are adopted, the Post Office may consider other restrictions that would bar lightweight mail that flutters off conveyor belts and three-dimensional greeting cards.

You can't buy any fleet car for less . . . unless it's a lot less car!

It's no news to price-conscious fleet buyers that most Chevrolet models—6's and V8's together—are lower priced than comparable models of other popular makes, based on manufacturers' suggested retail prices. But price alone is only one practical reason why you're sure to do better by your fleet dollars with America's top-selling fleet car. For no other low-priced car gives you so many dollar-saving advances that don't cost a penny extra—like a positive-shift starter on every engine to eliminate gas-wasting false starts, or precision-balanced wheels and tires for longer tread life. And nobody else in Chevy's field gives you so many refinements—like long-lived acrylic lacquer finish or Safety Plate Glass in every window—that pay off at trade-in time. Your dealer's got a long list of practical fleet features you can't get in any other low-priced car—and right now he's got the models in stock to make the gettin' real good!*

HYDRAULIC VALVE LIFTERS—Standard on all of Chevy's popular engines, they're oil-hushed for quieter performance. And you can forget about tappet adjustments.

MORE USABLE LUGGAGE SPACE—Over 22% more than Chevy's nearest competitor. And the deck lid is a foot and a half wider, for easier loading.

PRECISION-BALANCED WHEELS AND TIRES—You pay extra for this tire-saving service on other makes.

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READILY AVAILABLE REPLACEMENT PARTS—No other car backs up its dealers with such a widespread network of warehouses for distributing spare parts. This means less downtime, lower maintenance costs for fleet users. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

**Latest annual registration count by R. L. Polk & Co. shows 39.26% of sales to fleet buyers of 20 or more units were Chevrolets—more than any other make.*

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Bel Air 2-Door Sedan

Turkey Starts to Clean Up

U.S., relieved that Turkish anchor of defense chain remains safe, recognizes new regime; internal retrenchment may reduce imports from U.S.

STUDENTS who helped spark Turkish coup celebrate overthrow of Menderes regime.

The U.S. government this week quietly recognized the Turkish regime that came to power in a swift military coup last week. Washington is relieved that the almost bloodless "palace revolution" replacing Prime Minister Adnan Menderes was brought off by leaders friendly to the U.S. Turkey is a major ally and the anchor of the Southern Tier defense chain that runs from the Bosphorus through Iran to Pakistan.

The new government, headed by Gen. Cemal Gursel, is not likely to change its pro-Western, anti-Communist foreign policy while cleaning up internal political and economic disorders. Washington is encouraged by the topnotch people Gursel has gathered about him to form a transition government—mainly non-party intellectuals, including university professors, lawyers, professional government officials, and "eggheads" from within the Army officer corps.

• **Retrenchment**—Economically, the new government is expected to head into a period of retrenchment. Sales of U.S. exported goods will probably be limited to essential equipment to keep economic development projects going, and there will be little commercial activity until bank accounts are scrutinized and straightened out. The government will try to keep a tight rein on imports until foreign exchange reserves are rebuilt.

At midweek, exposure of corruption and graft within the Menderes regime began. Observers say most U.S. companies have kept their skirts clean in dealing with the Menderes government and probably will not be involved.

Also in the wind is a currency devaluation to counteract inflation. The present official rate is 2.8 Turkish pounds to the dollar, but inflation has driven real value down to 10 to one or more.

• **Political Moves**—Politically, Gursel has released from prison most of Menderes' political prisoners, and has removed many restrictions on freedom of the press and other civil liberties. Middle East observers doubt elections will come off as soon as Gursel indicates, however. The Turkish Army has a history of staying out of politics—but when it comes in, it stays a long time.

After its first cabinet meeting this week, the provisional government banned "all party activities, with the aim of preventing all discussions and struggles between brothers which might create angry incidents." This was interpreted as a move to prevent counter-revolutionary attempts.

• **Big Question**—The new government presently has the support of the Army, university faculties and students (who instigated the coup with a month of demonstrations and agitation), and the urban business community, which suffered from Menderes' economic policies.

The big question mark is the attitude of the farmers who were Menderes' main support. Menderes won their loyalty by large subsidies of grain and by abrogating anticlerical laws, building mosques, and restoring the prestige of the Moslem clergy.

The new government has already aroused rural Moslem hostility by stating that the constitution now being drafted would ban exploitation of religious sentiments for political purposes and would call for separation of state and church. These rural elements, however, are not organized well enough to put up strong opposition.

Although the major cause behind the Army's coup was corruption and tyranny, economic hardships played a large part. Menderes' sometimes overly ambitious and unproductive projects—such as building a new Istanbul—drained the treasury, piled up foreign debt, often threatened national bankruptcy. Only massive U.S. aid and West European credit facilities kept the country going.

Menderes' efforts to realize his ambitious economy schemes forced strict austerity on the people, and at the same time caused acute inflation. Imports of industrial materials and equipment were banned for a lack of foreign currency. Even coffee imports were cut. Turks went without a sip of their beloved thick coffee for months—as did those who patronized the Istanbul Hilton Hotel.

• **Aid Bid**—Washington expects a bid for substantial additional foreign aid—but hopes it will be better used than under Menderes. Some of it, if forthcoming, may go into paying off foreign debts, including about $50-million owed U.S. companies—mainly oil companies. Total debt owed to foreigners comes to nearly $500-million.

The new administration, backed by the traditionally anti-Russian Army, will undoubtedly stop any of the dealings with Soviet bloc countries, including Czechoslovakia and East Germany such as Menderes is reported to have had. Soviet economic aid, which Menderes was considering, seems most likely now.

Turkey is the sixth Middle Eastern, Moslem country—after Egypt, Syria, Iraq, Sudan, and Pakistan—to throw out a corrupt government and replace it with an essentially military rule. Middle East experts this week are hoping that the new Turkish government will keep its promise to restore democratic government, and perhaps set an example for neighbors still under military rule. **END**

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British Plane Makers Regroup

Under prodding of Ministry of Aviation, 30 aircraft and engine manufacturers have been reshuffled into five major groups. The goal: to snag more foreign orders.

By its own diagnosis, Britain's aircraft industry has not been in the best of health. With few military contracts, too much U.S. competition, and too many companies duplicating development work, the industry's export sales have slowed down. And exports account for roughly half the industry's annual sales. The only bright spot in the export picture is the sharp upturn in engine orders (chart).

Yet, after repeated prodding by Minister of Aviation Duncan Sandys, the industry now is reluctantly taking its medicine and is beginning to look healthier. The main dose: a wholesale reshuffling of 24 aircraft and six engine companies into five major groups—three, if you don't count the engine makers. Through these mergers, the industry hopes to coordinate its new projects and sales efforts.

• **Rival Groups**—Last week, as a final touch, Lord Portal, formerly chairman of British Aluminium, took charge of newly formed British Aircraft Corp. BAC is a holding company linking together Vickers-Armstrongs, English Electric, Bristol's Airplane Div., and Hunting Percival Aircraft. As the other main aircraft group, Hawker Siddeley earlier this year became kingpin in a merger of De Havilland, Blackburn, A. V. Roe, Armstrong Siddeley, and Folland.

Almost as important to the industry's future is the tie-up of Saunders-Roe, Fairey Aviation, Bristol's Helicopter Div., and Westland Aircraft. Under Westland's wing, this third group will concentrate on the stranger birds—helicopters, the Hovercraft (which uses air jets to ride over water), and vertical take-off planes.

• **New Goal**—The industry is taking aim at a high sales target—20% of new orders worldwide (largely excluding Communist countries). Its present share is estimated at less than 10%.

Since commercial jets came into full-scale service in 1958, Britain has sold or has orders for 100. By contrast, U.S. companies have orders for about 438. In the lucrative field of small, short-hop business planes, Britain has almost no entries.

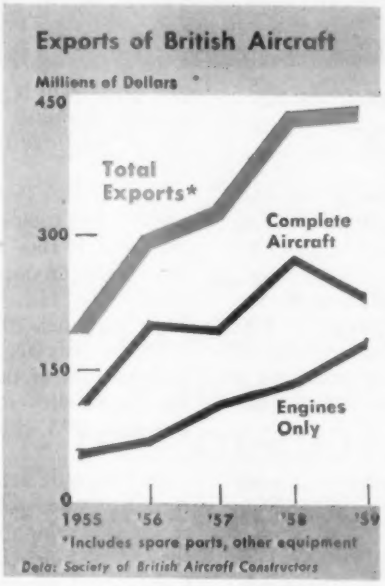
Thus, Britain hopes to improve its position as a poor second to the U.S. (excluding the Soviet Union). In doing so, it would like to crack the rich U.S. market, as the French Caravelle has in the short-to-medium range jet field (BW—Feb.20'60,p30). Though the turboprop Vickers Viscount found a customer in Capital Airlines, British jets to date has found no U.S. markets.

• **Government Support**—By regrouping, the British companies expect to get more government financial support. While U.S. companies have depended on the government for about 80% of their orders (military aircraft and missiles), British companies could count on only 50%.

British producers do have some government backing. For instance, of 81 turboprop Bristol Britannias sold, 56 have gone to the RAF and government subsidized British Overseas Airways Corp. Beyond that, the industry last year was partly cushioned by $434-million that the government budgeted for aircraft and missile research and development. The industry is talking hopefully about government support of between $1.2-billion to $1.5-billion for the next few years.

Until recently, the industry, a $1.6-billion business employing 200,000 workers, could well live off its past successes. After strengthening structural weaknesses in its Comet jet, De Havilland sold 48 of the Comet IV model. Vickers totted up about $450-million from its sales of 410 Viscounts. Engine sales have been high, too.

• **Serious Blows**—Then, in 1957, the government virtually ended contracts for manned aircraft. The industry immediately lost one advantage: government-financed development of military planes that could be converted to commercial use.



Next came the impact of the success of the U.S. aircraft industry in selling jets. Britain had hoped to capitalize on its head start in turboprops during the interval when airlines were switching from piston-engined planes to pure jets. But while developing turboprops such as the Lockheed Electra, the U.S. skipped ahead into the jet race, first with the Boeing 707, then with the Douglas DC-8.

In addition, the U.S. filled gaps in its jet fleets by joining with France. While Britain laid plans for short-and-medium range jets, which the U.S. as yet did not have, Douglas signed an agreement to sell French Caravelles. The British generally had refused such links. U.S. manufacturers also expanded licensing agreements with various West European producers, including the West Germans.

• **Quick Change**—After last October's election in Britain, the industry saw real changes in the wind. They came quickly. The old Ministry of Supply was converted into the Ministry of Aviation, and its head, Duncan Sandys, told the industry, in effect: Group together, or you won't win government support—or even sympathy.

In some cases, the industry leaders had less incentive to regroup than would U.S. companies under similar conditions. For many years, the big British companies had been diversifying, with aircraft only a portion of their total sales. The Vickers group, encompassing 62 companies, for example, last year had aircraft sales of $115-million. But with shipbuilding, steel products, and machinery sales added in, the sales total was $434-million.

Even with its reorganization over the past six months, the industry won't unscramble its affairs all that quickly. There are some 38 major aircraft factories and shops spread from southern England to Scotland. Duplication of machining equipment and research facilities will have to be eliminated.

• **Immediate Outlook**—At the same time, the industry is debating the sales outlook for several planes now on drawing boards or in early production. De Havilland's DH 121 medium-range jet won't be in service until late 1963—and to date only British European Airways has ordered it. Besides, Vickers is blueprinting a medium-range VC 11.

On top of that, the Vickers VC 10, designed as a competitor to U.S. long-range jets, won't be delivered until 1963. BOAC is the only customer so far. Even worse, by the time the VC 10 is airborne, U.S. companies will have modified existing jets to include most of the same design advantages incorporated in the Vickers jet. **END**

In Business Abroad

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IBM Breaks Ground in West Berlin For Electronic Data Processing Center

Despite the summit talk failure and a possible crisis over Berlin, International Business Machines Corp. is going ahead with plans to build an electronic data processing center and office building in West Berlin.

Last week, Arthur K. Watson, president of IBM World Trade Corp., and Willy Brandt, mayor of West Berlin, officiated at ground-breaking ceremonies (picture). The nine-story building will rise on Ernst Reuter Plaza, a planned "show-place" development. It is scheduled for completion next October, at a cost of $2-million.

The reason IBM is building in Berlin now, Watson said, "is due to my sound conviction that the future of Berlin is closely linked with the future of Western Europe." He added that IBM is not building for sentiment, but for sound business reasons and pointed to economic prosperity in both West Berlin and West Germany.

• • •

Jaguar Gets New Plant Facilities By Acquiring Britain's Daimler Co.

Jaguar Cars, Ltd., this week bought another automobile producer, Daimler Co. (not Daimler-Benz of West Germany), from Birmingham Small Arms Co., Ltd., for a reported $9.8-million.

Jaguar acquired Daimler to get a 1-million-sq.-ft. factory near the present Jaguar plant in Coventry. The government recently refused Jaguar permission to expand there. In common with other automotive producers, it was directed to a "distressed area" well away from traditional automotive centers.

Jaguar built 20,000 cars last year and is believed to have expanded production to over 450 vehicles a week recently. Profits have risen over 400% to $8.4-million in the last four years.

Daimler, which produces buses and military vehicles as well as cars, was running at a loss until two years ago. Even with the success of a new sports model, it was a "prestige" car rather than a moneymaker for Birmingham Small Arms.

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India Will Add 1-Million-Ton Capacity To Refine Crude Imported From Russia

India has decided to build a 1-million-ton oil refinery to refine crude imported from Russia. The proposed facility, the third such in the public sector, will go into production during the third Five-Year Plan, probably in 1962.

Negotiations between India and Russia covering details of importing Russian crude oil are nearly complete. **The Indian government may also ask the Soviets to help build the proposed refinery.** Russia and Rumania are already assisting in the construction of two other state-owned refineries.

• • •

$32-Million Deal Including Alcoa May Bring Aluminum Plant to Brazil

Aluminum Co. of America and the Hanna interests are reported working on a $32-million three way deal with a Brazilian firm, Alberto Byington, to construct an aluminum refining plant in the state of Minas Geraes.

Subject to Brazilian government approval, the plant will be built on a bauxite property owned by Byington near Pocos de Caldas. If the plan goes through, **the plant will triple Brazil's present aluminum capacity of about 10,000 tons per year.**

Byington also has projects for building up to three hydroelectric plants on the Rio Pardo river to furnish power.

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Refining of Russian Crude in Cuba Threatens to Glut Current Oil Market

In Cuba, three outside oil companies—Esso, Texaco, and Shell—will begin refining imported Russian oil next month, according to Cuban officials. A spokesman for one of the three oil companies says it's still "under discussion."

The Cuban Petroleum Institute, the government oil agency, says each company will refine about 35,000 bbl. per day. **If they do, they will glut the present market for refined product, which is 60,000 bbl. a day** (BW—May28'60,p143). They will also cut off crude imports from Venezuela, their current source.

Cuban officials say the move will save Cuba $24-million a year in dollars because they will exchange sugar for the Soviet crude under an agreement signed last February (BW—Feb.20'60,p47).

In a separate action, the U.S. government announced that it will end a $200,000 technical assistance program to Cuba within six months. The aid, which included services of nine U.S. technicians, was used to improve Cuba's civil aviation and agriculture.

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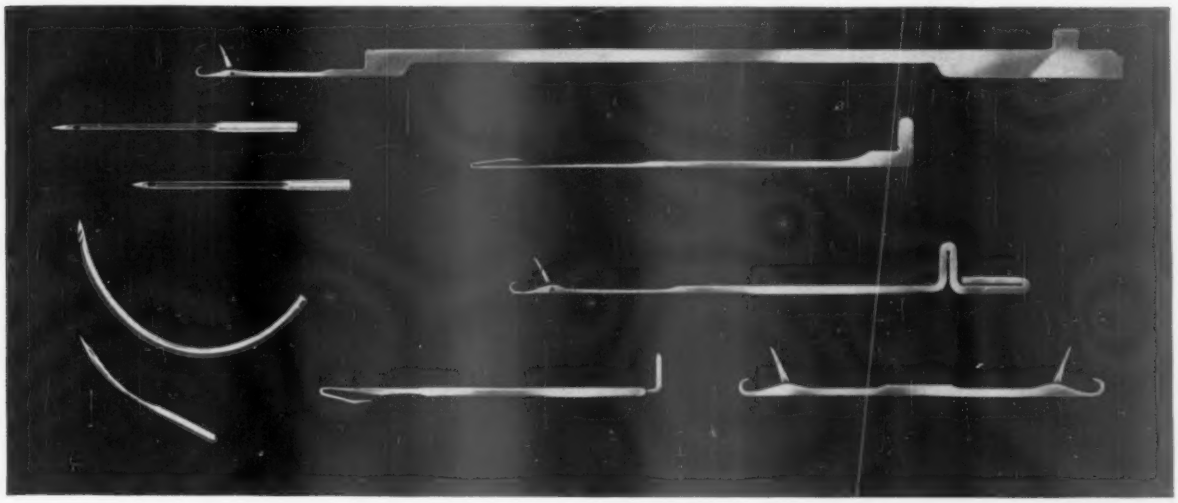
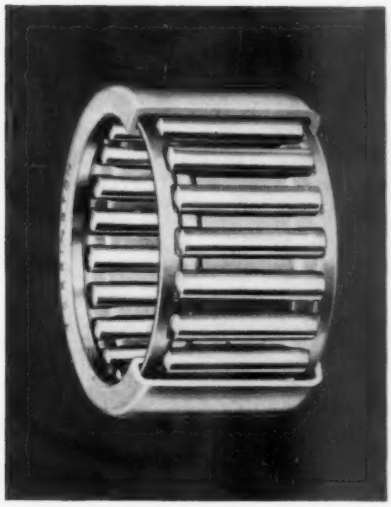


BUT THIS, TOO, IS TORRINGTON...



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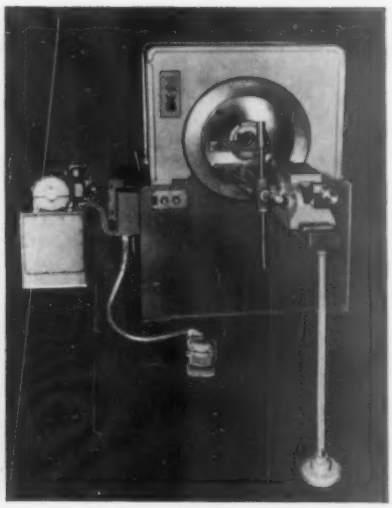

World's largest manufacturer of rotary swaging machines for economical chipless machining, newest of which is the versatile Electro-Hydraulic Die Closing Swager shown here.

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Recent Economic Growth — The Numbers Game

If it truly portrayed recent rates of economic growth in the United States, the report on employment, growth and price levels recently issued by the staff of the Joint (Congressional) Economic Committee would point up scarcely less than a national disaster. Among other things, it would document impressively Premier Khrushchev's crack that "the capitalist steed the United States is riding . . . is worn out."

One of the major findings of the Joint Committee's staff (in the Eckstein Report, named for its staff director Otto Eckstein) is that between 1953 and 1959 the average rate of growth of physical output in the United States was only 2.4 per cent per year. This is scarcely more than half the average annual rate of growth of 4.6 per cent the staff found to have prevailed between 1947 and 1953.

Happily, however, the report does not reflect the basic economic realities. Its finding on relative rates of economic growth for the two periods is a statistical *tour de force* which, by the selection of certain figures and certain dates, distorts the record of America's long-term economic growth.

Playing The Numbers Game

By the selection of appropriate starting and terminal periods it is possible to document almost any rate of economic growth that is desired. The table at the bottom of this page shows you how this can be done. It will also show you how the Eckstein staff worked out its shocking contrast in growth rates. The table is built like a schedule of airplane fares between different cities. The postwar years 1946 through 1959 are put down on two axes. One runs down the left hand column, the other runs across the top of the table. Put your finger on the point where the two axes intersect and you have the average rate of growth for the period covered.

ANNUAL AVERAGE GROWTH RATES OF THE U.S. ECONOMY, 1946-1959*

(Percent increases, starting year to terminal year, of GNP in 1954 dollars).

Starting Year \ Terminal Year	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
1946	X	–0.1	–1.9	–1.2	3.0	3.9	3.8	3.9	3.2	3.7	3.6	3.4	2.9	3.2
1947	X	X	3.8	1.8	4.1	4.9	4.6	4.6	3.7	4.2	4.0	3.8	3.2	3.5
1948	X	X	X	–0.1	4.2	5.3	4.8	4.7	3.6	4.3	4.0	3.8	3.1	3.4
1949	X	X	X	X	8.7	8.1	6.5	6.0	4.4	5.0	4.6	4.2	3.5	3.8
1950	X	X	X	X	X	7.4	5.4	5.1	3.4	4.3	3.9	3.6	2.9	3.3
1951	X	X	X	X	X	X	3.4	3.9	2.0	3.5	3.2	3.0	2.2	2.8
1952	X	X	X	X	X	X	X	4.4	1.3	3.6	3.2	2.9	2.0	2.6
1953	X	X	X	X	X	X	X	X	–1.6	3.2	2.8	2.6	1.6	2.4
1954	X	X	X	X	X	X	X	X	X	8.1	5.1	4.0	2.4	3.2
1955	X	X	X	X	X	X	X	X	X	X	2.1	2.0	0.5	2.0
1956	X	X	X	X	X	X	X	X	X	X	X	1.8	–0.2	2.0
1957	X	X	X	X	X	X	X	X	X	X	X	X	–2.3	2.0
1958	X	X	X	X	X	X	X	X	X	X	X	X	X	7.0
1959														

*Compound rates of growth

Following this procedure, you can find growth rates ranging all the way from —2.3 per cent, between 1957 and 1958, to +8.7 per cent, between 1949 and 1950, along with almost any other rate you would choose for various years and sequences of several years over the postwar period.

For example, if you want to demonstrate that the postwar growth rate through 1953 was less than 4% per year, you take off from 1946, include a drop of 0.1 per cent between 1946 and 1947, and come up with a growth rate for the 1946-1953 period of 3.9 per cent. But if you want to show it was quite high, you take off a year later, from 1947 (which drops out that dismal —0.1 per cent for 1947) and come up with a fine growth rate of 4.6 per cent for the 1947-1953 years.

Statistical Hocus-Pocus

That's what the Eckstein staff did. It took off at one end from a year when there was just about no growth, went to the Korean War boom year of 1953 at the other end, and got that average growth rate of 4.6 per cent. Then it took off from the Korean War boom year of 1953 and ran to the year 1959, when business was recovering from a recession and suffered through a steel strike of 116 days, to come up with its 2.4 per cent growth rate for the second postwar period. As the table indicates, by taking off a year later (1954) the average growth rate would have become 3.2 per cent, and if the take off had been 1949 it would have been 3.8 per cent.

There are those who, in nontechnical terms, would characterize this as statistical hocus-pocus. There are also those who would see in it an element of political hocus-pocus, too. This is because the years 1947-53, when the Eckstein staff found there had been the healthy 4.6 per cent growth rate, were roughly years when we had a Democratic president, while the anemic growth rate of 2.4 per cent it calculated for the subsequent years was for years of a Republican presidency.

Actually it can be shown that the civilian part of our economy has had more rapid growth during the Republican administration than it had during the Democratic years. If military expenditures are subtracted from the national ouput, the resulting growth rate for 1953 to 1959 is slightly higher than for 1947 to 1953.

However, we do not question the *bona fides* of the Eckstein staff. **But we do assert that it has produced a statistical picture of the postwar growth of the American economy which is dangerously misleading both at home and abroad.**

Abroad, the report appears to give official documentation to the propaganda line that the Soviet economy is running rings around the U.S. economy in growth, and that it is Communism a country should choose if it really wants to develop rapidly. Building on a much smaller economic base than the U.S.A., the Soviet Union — as well as almost every less advanced nation in the world — is bound to show a larger percentage increase in output than the U.S.A. But the Eckstein staff calculation gives the Communists ammunition they don't deserve.

Are We Facing A Crisis?

The contrast drawn by the Joint Committee staff in postwar U.S. growth rates suggests that we are facing scarcely less than a crisis through paralysis of our economic growth which calls for drastic remedies. But this, as the full 1947 to 1959 growth record set forth in the table makes clear, is very definitely not the case. Our over-all postwar rate of growth, as measured by the gross national product in physical terms, has been 3.5 per cent per year, a rate nearly double the long-term growth rate of 2 per cent per year between 1909 and 1939. In the continuing fluctuations in the rate of growth which more or less inevitably characterize a relatively free economy, we have had some downs in recent years. **But our economy is now on the upbeat again. And at the end of this year, the U.S. economic growth rate for the postwar period can be expected to be 3.7 per cent per year.**

It is extremely important for the United States to continue to maintain this rate of economic growth or even to surpass it. Upon this effort depends our capacity to meet our defense requirements without dangerous strain, to provide an adequate margin for foreign aid, to improve our own productive facilities, and to continue to raise our own standard of living.

How not only to maintain but possibly improve upon our postwar pace of economic growth will be the subject of strenuous debate in the months ahead. However, the debate will have a much better chance of being constructive if the postwar growth record is seen in proper perspective. To this end one of the first things to do is to junk panic rousing statistical portrayals such as that in the Eckstein report.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nation-wide developments. Permission is freely extended to newspapers, groups or individuals to quote or reprint all or parts of the text.

Donald C. McGraw

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PERSONAL BUSINESS

BUSINESS WEEK
JUNE 4, 1960

Is color television a good buy today?

Going into its seventh season with color, RCA—and runners-up Admiral and Packard-Bell—say that it is. Their ads sound convincing, and dealer demonstrations often prove impressive.

The question remains: Why are only about 1% (500,000) of America's 50-million TV sets in color?

From your viewpoint (disregarding price for the moment), maybe it's simply lack of discovery. Color television at its best adds an effective —almost startingly effective—new dimension to the medium. It doesn't contribute much to a small format, a roundtable panel discussion, for instance. But shows big in action and scope—like musical "spectaculars," westerns, and outdoor events, such as Davis Cup tennis, the World Series, and college football—are "naturals" for showing in color.

On top of this, color reproduction has improved in the past few years, both at the sending and receiving ends. Today, color quality at its best is good—and if you are fortunate, you will get some reproduction that vies with the kind of color you see at the movies.

What's more, color programs are being expanded by NBC, the sole "color" network. (CBS shows a bare scattering of color, and ABC has none.) **For the 1960-61 TV "season," about 1,000 hours of color programs are planned, as against around 800 for the current season. This amounts to something like 15% to 20% of total NBC network time on the air—and maybe 1% at most for CBS.**

An interesting color addition will come on the local scene this fall when a number of cities (Boston, Chicago, Cincinnati, Fort Worth, Milwaukee, Omaha, and Philadelphia) get expanded schedules of local colorcasts. **Incidentally, over 50% of all U. S. TV stations today are equipped to handle network color programs, and virtually all viewing areas in the country have been brought within the range of color.**

Then why the cool reception on the part of the public?

Price, of course, has been an obvious drawback. **RCA color models start at about $500 for a basic set (table model), and go up to about $1,500 if you want a good piece of furniture, plus electronic accessories like a stereo record player.** Admiral sets (using an RCA picture tube) start at about $600, and a Packard-Bell (also using an RCA tube) costs $800.

But price isn't the only negative feature in the color TV picture today. These points of caution are made by both TV critics and home viewers alike:

• **Reception.** Although color TV "at its best" is well worthwhile, reception may not be at this peak in your living room, depending on your location and other factors. Also, the programs, say the critics, are not uniform—some are superior, while others produce such color distortions as unnatural flesh tones and odd color contrasts. **Moreover, the black-and-white reception you get with a color set is apt to be just passable (and this, of course, is what you'll be seeing about 90% of the time).**

Besides this, say some experts, color TV needs a more powerful aerial in many locations; also, if "ghosts" appear now on your black-and-white screen, these are apt to be worse with color. Also, tuning isn't easy.

• **Service. You can sum up the unpleasant problem of repair and maintenance by noting that RCA sells a large percentage of its color users a 90-day service contract for $39.95.** If you want to get covered for the first

full year, you pay anywhere from $54.95 to $104.50, depending on your set and extent of service provided. **After the first year, you pay a flat $119.50 for 12 months.** (There is a one-year warranty on new parts.)

• **Fatigue. Black-and-white TV doesn't hurt the eyes, unless you go for extremely long periods without a slight let-up—and the same is true with color.** But color may disturb certain people who require particular "color balances" for comfort. Also, psychologically there is more stress with color; **it is more intense, and therefore more tiring for some people.**

The future? Color TV appears to be as perfected now as it will be for some time to come—at least, that's RCA's view. No mechanical changes that might outdate a current set are predicted. You might want to wait for a look at **Japanese-made color TV, which may be available to U.S. customers within a year (page 52).**

—•—

Been thinking about buying a car in Europe? In addition to several well established purchase plans available, new promotional sales "packages" offered jointly by dealers and air/sea carriers are cropping up.

Perhaps the best known procedure is to order here and then pick up your car in Europe. Buying a car this way may save you several hundred dollars on some luxury model foreign cars even after you have paid shipping charges to the U.S. and duty. You also have use of the car while abroad. For example, you can buy a Mercedes Benz 300 SL convertible for $8,657 (including shipping) compared with a minimum list price here of $11,000. But bear in mind that such a purchase takes considerable advance planning (Auto Europe, 25 West 58th St., New York 19).

Under another plan, offered by KLM's "ShipSide," you select a car upon arrival at Schiphol Airport, Amsterdam, and later on are assisted with shipping. If no arrangements for such a purchase are made prior to your trip, you and each member of your family can apply a $500 duty exemption to the car (ShipSide Car Delivery, Inc., 609 Fifth Ave., New York 17).

Another new development is the "Atlantic Finance Plan." Here you make a down payment of one-third of the European factory price of the car; it's delivered to you wherever you choose in Europe; and upon your return you make monthly payments (Europe by Car, 37 West 57th St., New York 19).

A tip: **The American Automobile Assn. has an extensive overseas car purchase operation for members that may save you considerable time and effort** (AAA, 1712 G Street, NW, Washington 6).

Among "fare-car" plans is one offered by Peugeot. You get a free round-trip flight, to Europe and a new Peugeot 403 delivered in Paris for the New York price of $2,295. The car will be shipped back to Eastern ports at no charge and to other ports for a nominal charge (Cars Overseas, Inc., 41-39 38th St., Long Island City, N. Y.).

—•—

Tax break: Under a new law you can deduct medical bills paid for parents claimed as dependents, and ignore the rule allowing only amounts over 3% of your adjusted gross income. You can deduct up to $5,000, as a single taxpayer, or up to $10,000 on a joint return—if both parents are dependent. Considerable leeway is allowed in deducting expenses for nursing homes and sanitariums.

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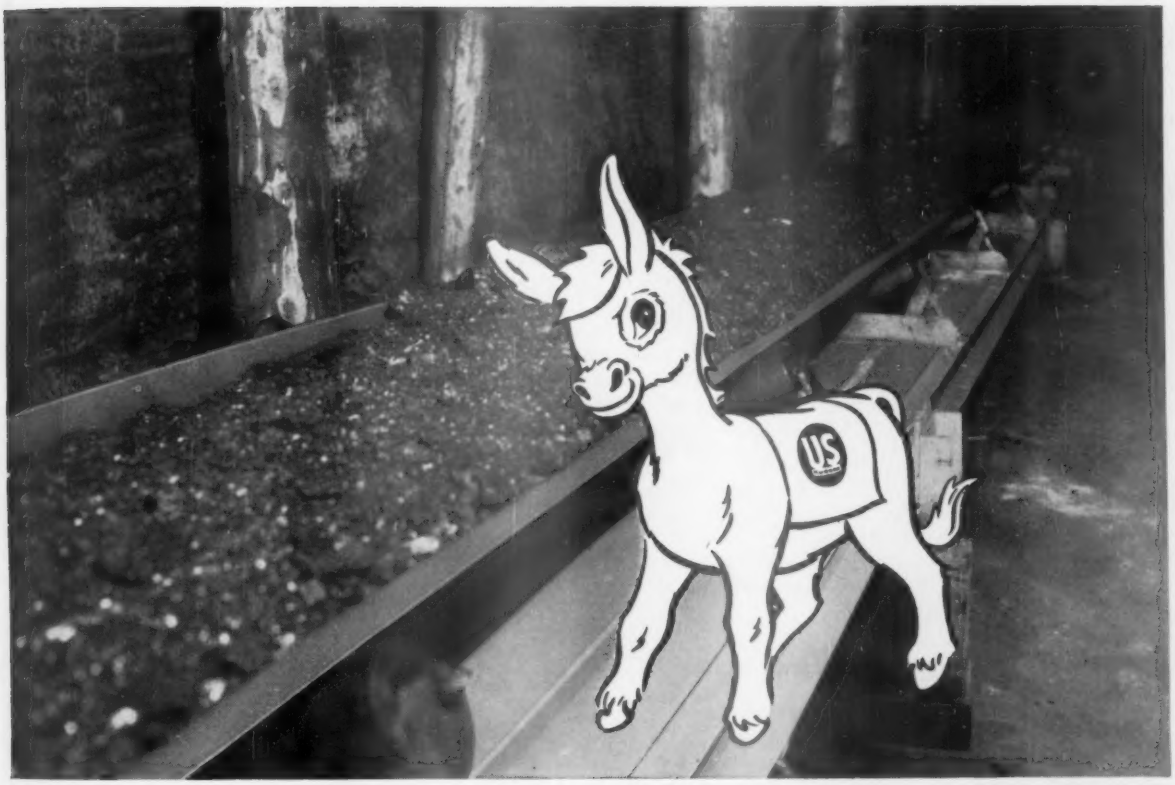

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In Management

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Emotional Strain on Executive Health Is Much Overrated, Doctor Says

Executives are no more prone to stress diseases such as heart attacks, high blood pressure, and ulcers than other company employees, according to Dr. Gerald Gordon, chief psychiatrist of E. I. du Pont de Nemours & Co. Speaking before the international conference of the National Office Management Assn. in Montreal last week, Dr. Gordon attacked the idea that there is any unique factor in the executive work situation that would cause emotional difficulties.

Dr. Gordon feels that executives must be careful not to accept mistaken notions about the cause of stress diseases. He says they should gain a broader understanding of the way such emotions as fear and anger play a natural and even healthy role in life.

"One of our most firmly held delusions," he said, "is that emotional upsets are harmful and that worry is akin to taking poison."

As an aid to the health of supervisors and their subordinates, executives have a responsibility to keep everyone informed of the facts of his performance, according to Dr. Gordon. For the supervisor who tries too hard not to upset people winds up creating tension, not only for them but also for himself. And, Dr. Gordon argues, management should not try to do the impossible job of making everyone happy. All it can do is provide a healthy atmosphere where people "can find their own salvation."

• • •

IBM's New Computer System Manages Complete Manufacturing Operation

International Business Machines, Inc., last week introduced a system that it says will allow the whole job of managing a manufacturing operation to be done by electronic data processing equipment. **What the system does is tie together computer operations that run six areas:** forecasting, materials planning, inventories, production scheduling, dispatching, and the evaluation needed to check on the whole process. This means that barring an emergency or equipment failure, an incoming order, once translated to a punch card, would automatically be included in the calculations and scheduling that control the entire manufacturing process.

The "Management Operating System," as it's called, uses no new equipment but is a programing method for tying together many computer operations that are already widely used in industry. IBM doesn't expect many companies to jump at the whole package at once, but wants them to have it in mind when they put in data processing equipment to handle one operation or start thinking of tying together two functions such as materials planning and inventory management.

Although MOS must be fitted to each application, it has been designed on the building-block principle. Several types of forecasting methods or inventory control systems, for example, are available, so that the customer can pick the one he favors or that goes most easily with any electronic systems he already has installed in his plant.

IBM anticipates that its major difficulty in selling the MOS idea to management is that at this stage in the development of computer systems it is sometimes hard to relate their cost to definite dollar savings—this is a particular problem with something as big and new as MOS. But **some definite areas of savings have shown up already.** By leveling out production schedules, the system gets greater efficiency from production labor and cuts down in-process inventory. The Management Operating System also makes it possible to make rapid production changes due to both revised orders and engineering modifications.

MORE NEWS ABOUT MANAGEMENT ON:

• P. 134—Pfaudler Permutit hunts a name that won't twist tongues anywhere.

• P. 141—General Electric tries to put its Syracuse-area stockholders to work.

• • •

Management Briefs

The Hertz Corp., which is moving its headquarters from Chicago to New York next month, has arranged a novel inducement to keep the employees who are staying behind from quitting before the move is completed. For every month of perfect attendance since the move was announced last February, the employee gets a raffle ticket on a car, mink stole, and other prizes the company is providing.

The ranks of executive consultants who specialize in almost every possible service got another enlistee recently in New York with the formation of Executives on Camera. This outfit concentrates on the job of preparing executives for the ever increasing number of TV and movie cameras they must face. The idea is not only that an outside specialist can give professional tips but that he is freer than subordinates to correct annoying mannerisms that show up on camera. Fees are based on hourly rates or a yearly retainer.

Lon D. Barton, president of Cadillac Associates, Inc., Chicago-based executive recruiters, last week let out a **blast against personnel testing programs,** now widely used in business. He said they were "utterly worthless," and he went on to deplore the way executives often are "pushed around by a bright young Ph.D."

Alfred Bersted was elected president of the McGraw-Edison Co. last week. He succeeded Max McGraw, 77, the electrical equipment company's founder and its president for 60 years (BW—Dec.19'59,p126). McGraw became chairman of the newly formed executive committee. At the same time, Raymond H. Geisecke, treasurer and assistant to the president, was elected executive vice-president and treasurer.

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YUGOSLAV-born employee pronounces suggested name in his native tongue.

SPANISH-speaking worker for Pfaudler Permutit, Inc., sounds out the same name.

GERMAN student adds his talents to the company's search for a universal name.

Pfaudler Permutit is a company with a name that's a mouthful to say. It's also a company with an international future. So it's looking for a new name that's easy to pronounce—and innocuous—in any language. To do this, it called in foreign-speaking students and employees (pictures) to aid . . .

Search for a Universal Name

Pfaudler Permutit, Inc., Rochester, N. Y., is a company hunting for a name. It's doing just that in the pictures. Pfaudler Permutit (pronounced Faud'ler Per-mu'-tit) called in eight of its own bilingual employees and four foreign students at the University of Rochester to help sort out some 55 proposed new names.

• **The Problem**—The company has three big reasons for wanting a new moniker:

• It is actively looking at a whole flock of other companies of various sizes with the intention of acquiring new businesses. As Donald A. Gaudion, president, puts it: "If we just keep adding new company names to Pfaudler Permutit we'd end up sounding like a New York law firm."

• As a worldwide company operating in several countries, it is important that the corporation have a name that can be pronounced in any language, has no bad connotations, and has letters that fit most alphabets.

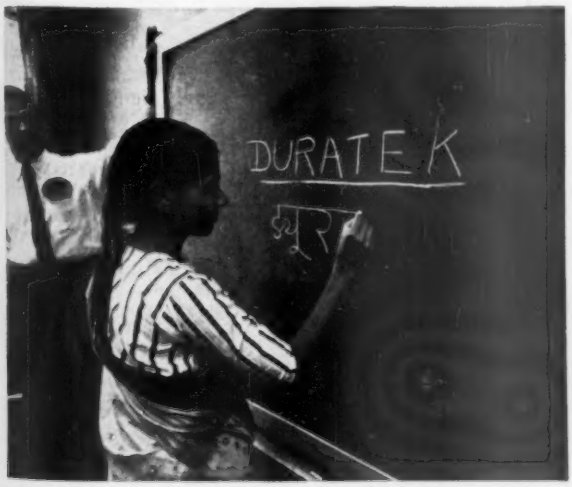
• Finally, even in English, the name Pfaudler Permutit is a tongue twister carrying no hint of what the company does. Executives realized this in 1957 when the Pfaudler Co. and the Permutit Co. merged. Says Gaudion: "You couldn't find two names stickier to pronounce—and to put them together made it worse." But both were well known trade names and nobody could think of anything better at the time. "One company wag," says Gaudion, "suggested we call it Pfit, Inc."

Actually, the company didn't get too much help from its session with the foreign linguists. Omco, one of the 55 possibilities, was tossed out by Patricia Yamada, a Japanese student, who said it means bridegroom back home. Manico, according to a Spanish-speaking Pfaudler employee, suggests mental hospital. Kinatek, said a German student, is too close to kino, a generally accepted term for movies in Europe. And Pifco is akin to Piefke, a legendary comic character in Berlin on the Sad Sack order.

• **Linguist's Choice**—The name that appealed to most of the linguists was Duratek, which was pronounceable to a Yugoslav-born employee, a student from India, as well as a Chinese employee. Duratek sounds reasonable, but Gaudion, a boat enthusiast, discovered an all-aluminum craft with the trade name Duratech and wonders if that's too close to Duratek.

So Pfaulder Permutit is still looking for a name. Gaudion had favored Unitek, but his lawyers found a company in California with that title. "We thought about buying the company, but decided against it," says Gaudion.

• **Broad Coverage**—Ideally, says Gaudion, he wants a name that is just a



INDIAN student Lalita Sudarshan voices (left) and writes (above) one of the proposed names. Linguists also screened names, meaningless in English, for bad connotations in their languages.

CHINESE employee of Pfaudler Permutit, Pao Jen-Chao, translates same name into Chinese characters. The company eliminated names that had letters that did not fit most foreign alphabets.

Minding our own business

BACKSTAGE AT BUSINESS WEEK

Our man in Moscow. With Russia apparently betting on economic victory, *Business Week's* Moscow Bureau Chief is one of the most important reporters anywhere. No other resident American newsman can spend as much time covering Russian economic and technical developments. So when Ernie Conine, of our Washington staff, recently relieved

Bob Gibson in Moscow, and Bob became our Assistant Foreign Editor, we became just twice as well equipped to keep business and government readers informed on Soviet economic progress.

●

Follow that scent. Ever heard of Chaqueneau? It's a perfume—for ladies, of course, but *sold* only to men. A neat marketing switch. Last December 12, in *Business Week's* "Personal Business" department (devoted to the off-hours problems of executives), we mentioned Chaqueneau as a possible last-minute Christmas gift for wives. It rang a bell—mostly our telephone—as desperate management men all over the country clamored for more information. Among

other gratifying results, by Christmas Eve 52 subscribers had rushed into one of Chaqueneau's New York outlets, Rogers Peet, many of them clutching "Personal Business" in their nervous hands. Don't tell *us* there's no romance in business.

And now, if you'll excuse us, we're off to visit Mlle. Chaqueneau—to tell her where to advertise her perfume when she wants to influence management men:

BUSINESS WEEK
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You advertise in Business Week when you want to influence management men

JAPANESE student, Patricia Yamada, was one of four from University of Rochester who joined in testing suggested names.

little bit descriptive of the company's present business, but broad enough to characterize a much wider field of activity. Last year, the company started promoting a coined word, fluidics, to go along with a new stylized company symbol, a liquid drop inset with a globe. This served its purpose by cutting across Pfaudler Permutit's present business, which is the handling and treatment of all kinds of liquids for industry. The Pfaudler division's main line is glassed-steel process equipment largely for the food, chemical, brewery, and pulp and paper industries. Permutit makes water treatment equipment and chemicals.

The merger was a natural. Pfaudler had gotten into waste treatment recovering chromic acid from a Pontiac plating plant. It began looking toward merger in this field because of the great market potential now that (1) government agencies are insisting that plant waste be removed before dumping liquids into rivers and (2) pure water is becoming a premium commodity. Previously, it was often more economical to dump waste water even though it contained usable raw materials. Now the economics and anti-pollution pressures have changed.

• **Future Reference**—So fluidics, which the company uses in its corporate image advertising, covers the Pfaudler Permutit business well. But it won't work under the company's present plans for growth (and, besides, the Rochester linguists turned thumbs down).

"We know in the future that our business is going to be far broader than just handling fluids," Gaudion says. He cites Frigidaire as a name that is perfect for refrigerators and air conditioners but hardly appropriate for other appliances, such as a range. Cold Spot, a Sears Roebuck trade name, also fits refrigeration, but wouldn't be so hot on water heaters. Sears markets water heaters under the Homart label, which Gaudion points to as ideal for all kinds of home appliances and equipment.

Pfaudler Permutit's search for a name is all the more difficult because the company right now is in the middle of making up its mind about how and in what direction it wants to grow. This is why Gaudion calls 1960 "the year of decision," both in finding a name and the businesses to go with it.

• **On Target**—In 1954, Pfaudler set a goal of a $60-million business. "As an $8-million-to-$10-million company," Gaudion says, "with just one product, Pfaudler was vulnerable." This year, Gaudion insists, his "60 by '60" growth program, which included the Permutit merger, will be right on target. Incoming orders for 1960 are expected to reach $60-million, a big jump over 1959. Sales for 1959 were $36-million.

"We are now at the stage we don't feel panicky," says Gaudion. "But the question is do we stop here at $60-million or add, say, a $40-million outfit."

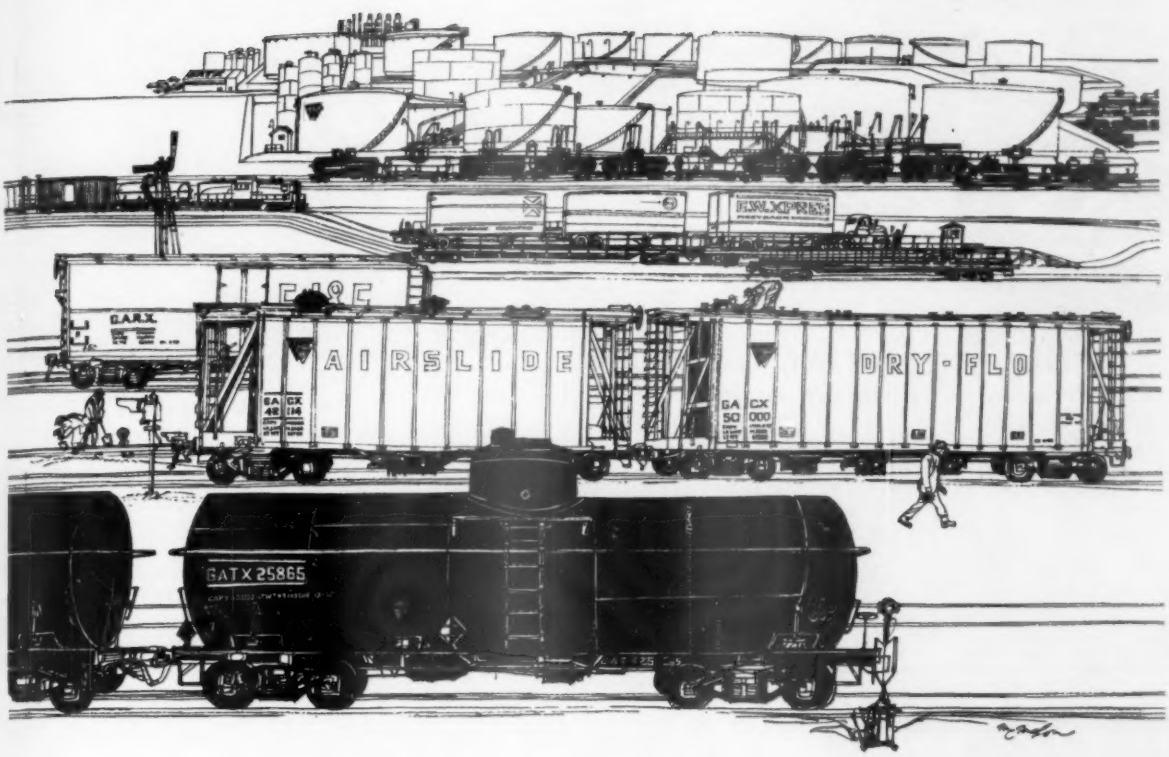
• **Two Courses**—Gaudion says there are two ways to grow by acquisition. One is by what he calls niche-filling, or buying a company that fills out your line. This creates automatic savings, since the acquisition should fit into one or more parts of your company, such as marketing, manufacturing, or research and development. A company can take on the added business without major policy changes and the new prosperity will generate earnings quickly.

There is also the possibility of getting into what Guadion calls crapshooting. This is to pick some glamorous research laboratory developing items that are far out front in the technological parade. A small investment, say 10% of your net worth, is worth the gamble that you'll latch onto a hot item. But it takes time to achieve growth this way, and the risk of failure is great. You don't get immediate major gains in size; and size, Gaudion believes, has its advantages.

• **Next Step**—Thus, at this point, Pfaudler Permutit is considering its next big step. One company in the capital goods business, with a sales volume almost equal to its own, has attracted its attention, although no decision has been made to acquire it. The acquisition would put the company into the $100-million class. But there are disadvantages in such a move. There is no automatic saving since a complete staff is necessary and any increased per share earnings must come from growth of the new acquisition.

On the other hand, Gaudion thinks there are good buys available among capital goods companies right now. Many are worried about foreign competition, both at home and abroad. "Capi-

Imagination at work for Industry



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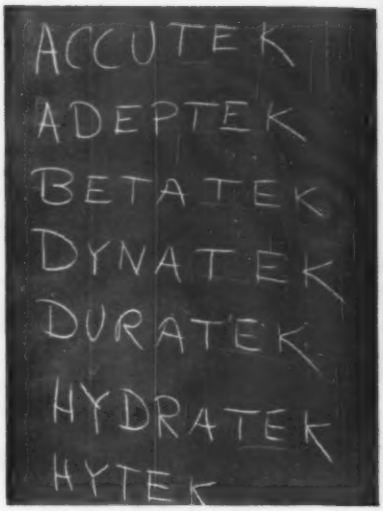

POSSIBILITIES considered as new name for Pfaudler Permutit included these. The company still hasn't selected one.

tal goods manufacturers overseas," says Gaudion, "can now gear up for a mass market and can also compete in the U.S."

Domestic manufacturers are looking for ways to offset this and Gaudion believes a lot would be glad to get into business abroad with Pfaudler Permutit, which has growing overseas operations in Germany, Japan, England, Mexico, Canada, and Brazil.

"This idea intrigues us," says Gaudion.

He is searching for the right company, whose products can be manufactured in Pfaudler plants here and abroad and can be sold to the same industries that Pfaudler now serves.

At the same time, he wants to be ready with a suitable new name when the next big step is made. With the rapidly growing foreign operations of Pfaudler Permutit and the possibility of adding to that by acquisition, it is vital that the name be universally acceptable.

• **Classic Example**—Gaudion's preoccupation with finding a new name partly stems from his experience at Eastman Kodak. A Harvard Business School graduate, he worked for Kodak as assistant to the sales and advertising vice-president. There, he says, he was "steeped in the potency of that name in world markets." A coined word that means nothing, Kodak nevertheless has become a textbook classic as one of the most carefully devised names for doing business around the world. It fits Gaudion's prescription: Hard consonants with no j's or l's, easily pronounced in all languages, distinctive and short, and meaningless—a condition that helps a company maintain its rights to a name. Yet, despite its lack of meaning, Kodak is often used synonymously for camera. **END**

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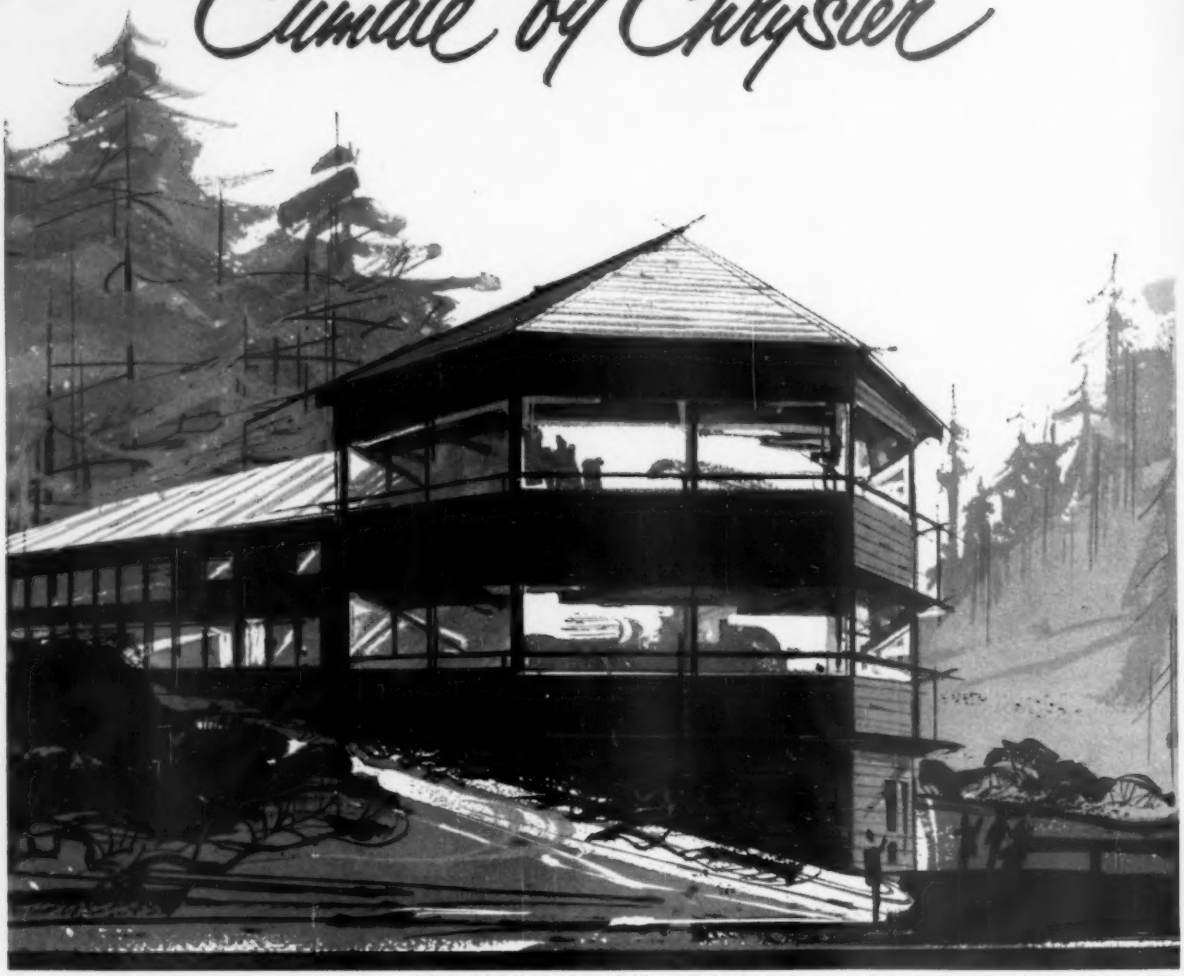

Lake Shasta's Bridge Bay Resort, Redding, Calif. Chrysler Air Conditioning Contractor: Shasta Sheet Metal, Inc., Redding, Calif.

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Bridge Bay Resort uses this method. And the entire job is handled by five Chrysler units that have condensers on the ground and blower units in the attic or on the roof. One need but stroll about—through one of the cocktail bars, the octagonal dining room, or the summer stock theatre when in use—to know that cooling is comfortably provided to suit the varying requirements of each area.

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How about your air conditioning problems? If, like the Bridge Bay Resort, economy and flexibility are the answer, your local Chrysler Air Conditioning Dealer is the man to contact. He can give you the full story about all the advantages inherent in Chrysler Packaged Air Conditioners. For his name, see the Yellow Pages.

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STOCKHOLDERS are briefed by staff members of General Electric plants in Syracuse on how they can help to improve business climate.

DISCUSSION period follows each lecture on political and economic problems. The series of four talks at Electronics Park is pilot program, but may spread to other GE plant towns.

PERSONAL answer to stockholder's question comes from GE's John T. McCarty.

A Special Job for Stockholders

General Electric Co. wants more from its stockholders than just their capital. It wants them to get out and work for its interests—and for the cause of "free and competitive enterprise."

Some 100 stockholders in the Syracuse, N. Y., area got this message last week as the local GE management wound up a novel experiment in stockholder "education," a series of shareholder symposiums to improve "understanding and cooperation between the owners of the business and the people who manage it." More concretely, the aim was to enlist stockholder aid in GE's drive to build what it calls a better business climate in plant cities and legislative halls.

• **Enthusiastic Audience**—The Syracuse audience seemed to take to the idea. "There's no time to be lost in getting started—we may be too late now in selling free enterprise," one elderly businessman said. Others were calmer—but enthusiastic enough to suggest that stockholder groups in other GE plant cities may soon get the same treatment.

The thought that share owners can be useful in plugging corporate causes is hardly exclusive with GE. Lately more and more companies have been dabbling in public affairs—announcing stands on public issues, backing get-out-the-vote campaigns, urging participation in local politics, and distributing legislative voting records (BW—May30 '59,p45). Stockholders have been on the receiving end of these campaigns, along with executives, employees, and the public at large.

Mostly, though, share owners have been propagandized through the mails, with letters, bulletins, reports. Now GE is tackling them face-to-face on their own home ground. Several GE plants have thrown in speeches on the "business climate" as part of one-day stockholder open houses. But the Syracuse community relations staff was the first to come up with a series of seminars condensing for the stockholders some of the things the company teaches its employees in economic education, political action, and business climate courses.

• **Curriculum**—Syracuse's public affairs symposiums for share owners began

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FINANCING

. . . what could the GE stockholder do? Study up, join up, speak up—and build up . . .

(STORY on page 141)

May 2. They covered "the national economic climate in which business operates, the role of organized labor in our economy, the business climate in Syracuse and New York State, and what one person can do toward community improvement."

A group of stockholders in the area, picked more or less at random, were invited by GE Vice-Pres. George L. Haller to attend "for discussion of common political and economic problems." About 100 turned up each week at W. R. G. Baker Hall, GE's reception building at Electronics Park in Syracuse. They collected "resource kits" (containing notebooks, ballpoint pens, reading matter, and bibliography); thumbed through such items as the voting record of the 86th Congress and a pamphlet titled "How our Laws Are Made in the Congress of the United States"; and then settled down to listen and discuss.

• **Company Viewpoints**—At the first session J. J. Farrell, general manager of GE's Heavy Military Electronics Dept., made the company's position clear. He attacked creeping inflation, big government spending, and proposals for various sorts of government regulation.

"There have been bills in Congress which would regulate prices," he said. "There are people who seek government intervention in the collective bargaining process between management and labor. There are those who demand that government place its contracts according to the needs of communities rather than the ability of the contractors." All this, he concluded, means there is "an important educational job to do . . . and that is where we need your help."

• **SPP Club**—At the "Graduation Day" session last week, John T. McCarty, Electronics Park manager of employee and plant community relations, was even more specific. Instead of giving out diplomas, he told the stockholders, "we are making you members of the SPP Club. That stands for Stretch Purchasing Power."

What could the GE stockholders do? "Study up, join up, speak up—and build up." McCarty urged his audience to talk to their families, ministers, business associates, milkmen, and dry cleaners about the importance of a "climate of free and competitive enterprise." He suggested they get civic and educational groups to sponsor economic study courses—or even start one themselves in their own neighborhoods. "Most vital of all," he declared, is for every citizen to "work hard for the political party of his choice."

"Does this seem like an enormous job we've outlined for you?" McCarty asked. "Well, you're absolutely right. It is."

• **Practical Advice**—During the question period that followed, a portly white-haired share owner said he couldn't see much difference between Republicans and Democrats. "How do you go about selecting a party?"

McCarty's firm answer: "Independents are the worst kind of people. Choose the party closest to what you believe, become active in it, and speak up in support of the principles in which you believe."

"I'd like to see Barry Goldwater as Nixon's running mate," a gentle-looking woman shareholder mused during the refreshment period. "I could get a letter-writing campaign started to urge the National Committee to support a Nixon-Goldwater ticket." With an embarrassed laugh, she added that she'd "never done such a thing before."

"I wonder if it really helps for just one person to write a congressman," asked a matronly woman hesitantly. "You'd be surprised how much it does," her companion snapped.

• **Shareholder Reaction**—The sessions were viewed by GE as a pilot program, to be offered to other plants by the headquarters investor relations staff if successful. Results of a questionnaire distributed to the participants haven't yet been tabulated, but after a quick scanning GE officials in Syracuse feel the experiment was a success.

"Congratulations on this beginning," one stockholder wrote; "I hope other companies will follow your leadership." Another had attended the first session out of curiosity but "found it so interesting I was drawn back to the others."

There were criticisms, of course. Some felt there wasn't enough audience participation; others asked for more company information and for sessions on specific economic and legislative issues.

Most stockholders seemed to agree with the views expressed by the GE representatives. There was praise for the "very frank and honest presentations" and for the GE people's "friendly attitude," "integrity," and "forthrightness." One woman felt "unsatisfied" after the session on organized labor but said that may have been because "I was unconsciously hoping for an out-and-out indictment of union practices." **END**

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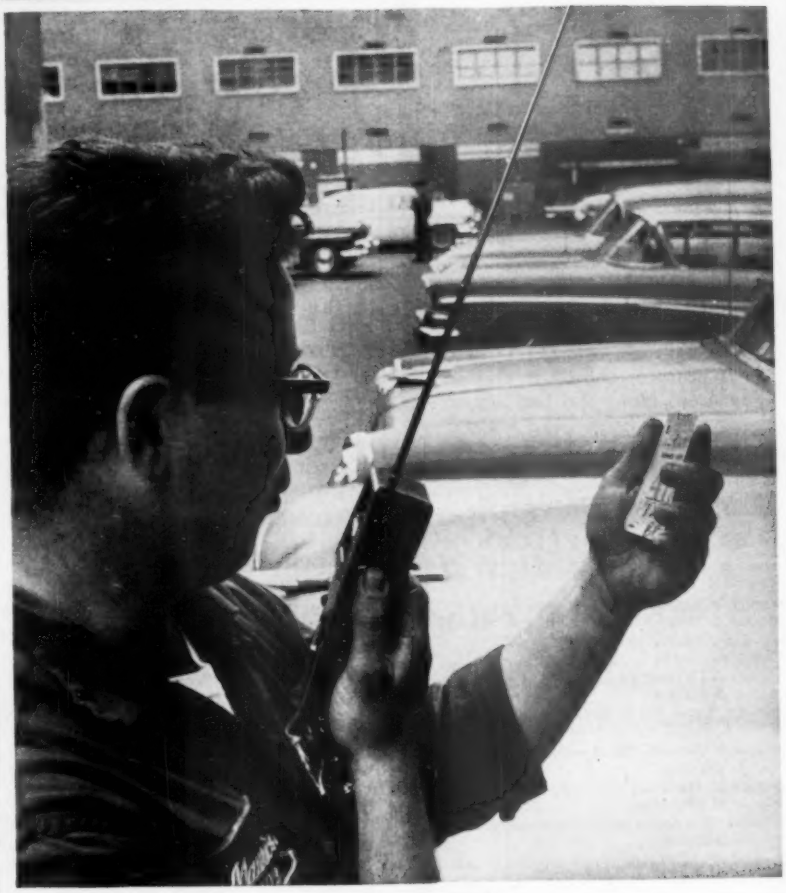

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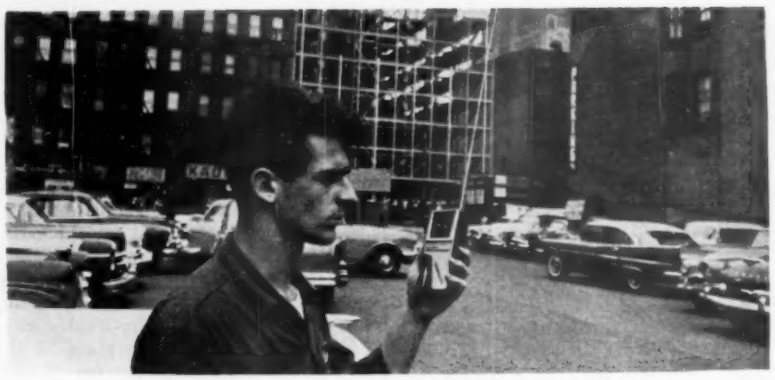
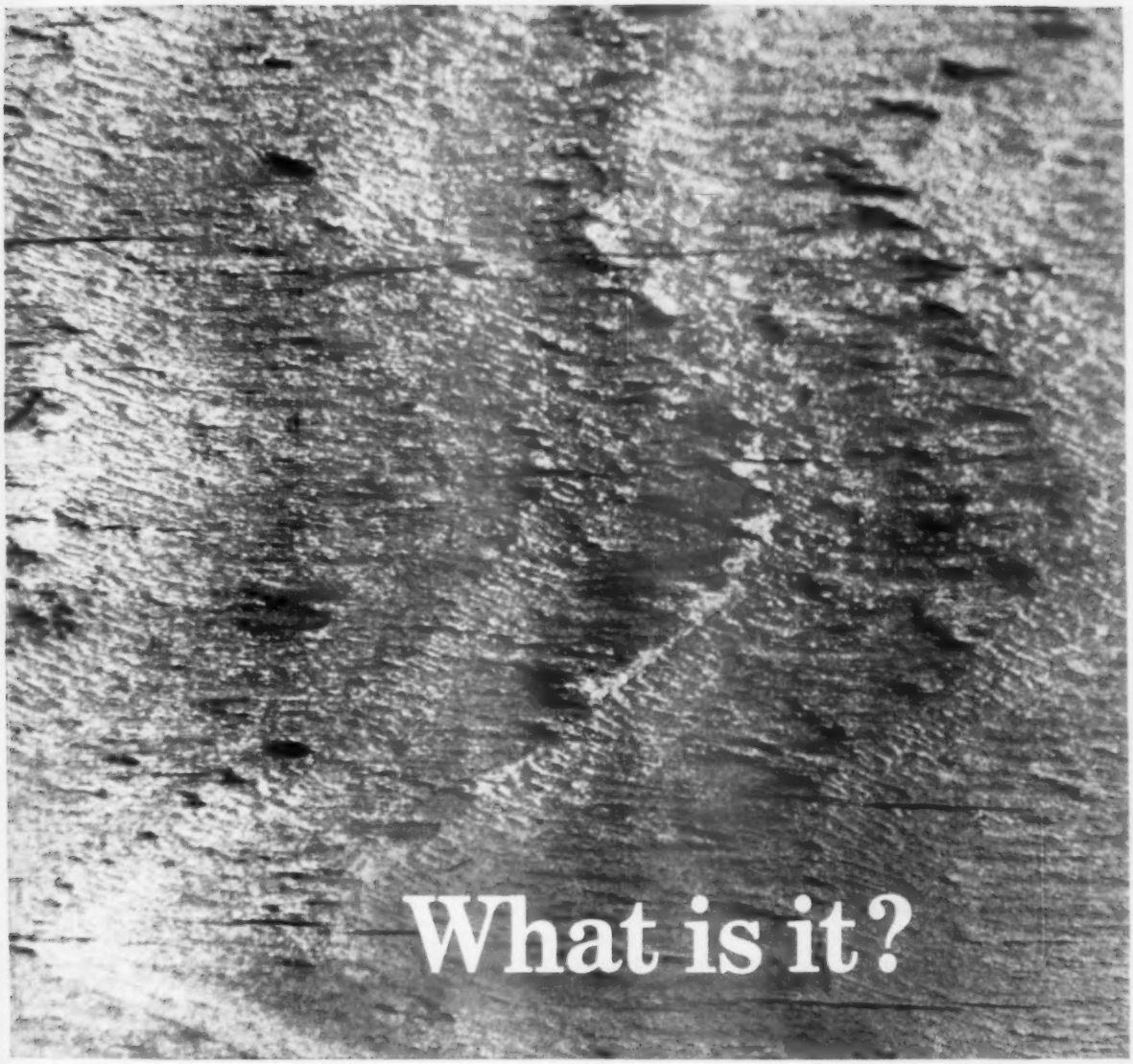


. . . Gets the Orders Across Fast

The parking lot attendants in the pictures are speeding up their operations with the help of a pocket-size two-way radio, called the Pocketphone, manufactured by Globe Electronics, an Iowa division of Textron Electronics, Inc.—itself an affiliate of Textron, Inc.

Said to be the smallest on the market, the transistorized device measures 1⅞ in. by 2⅜ in. by 6¼ in.—about the size of the miniature transistor radios that have been around for a couple of years. Each unit contains a complete transmitter and receiver, with built-in microphone and speaker, retractable whip antenna, and a plug for earphones.

Using a pair of these, you can carry on a conversation at distances up to a mile, according to the company. The Pocketphone is powered by a 9-volt



AERIAL PHOTO of the ocean? No. Rocket's eye view of a landscape? A good guess, but wrong again. Wood you like a hint? You guessed it – lumber. More specifically, plywood – photographed very close up and enlarged many times. The point is, no matter what you want to ship – from something as substantial as wood to something as volatile as oil – you can be sure the Rock Island will spare no effort to transport it carefully, quickly, and economically. Modern equipment, electronic traffic controls, automatic classification yards, system-wide teletype and microwave networks, experienced, expert, conscientious personnel – all assure that your freight will be handled the way you want it handled.

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rechargeable nickel-cadmium battery, which is said to have a life expectancy of nearly a year of eight-hour-a-day operation.

• **Uses**—Since the set broadcasts in the frequency range known as the Citizens Band and puts out less than 100 milliwatts of power, you don't need an FCC license to use it. Globe sees many possible applications: factory and office communications; department store and hospital paging systems; dispatching outdoor teams of workmen, such as construction crews; ship-to-shore communication for pleasure boaters.

Some in the radio communications field feel that Citizens Band broadcasting is not really practical in business and industry, because of overcrowded channel conditions; they believe it is best restricted to personal use. Globe, however, doesn't think this is the case at the short ranges covered by its new device.

The Pocketphone costs $125.

Automatic Filter Spots The Tiniest Impurities

Filtering liquids to test for minute amounts of impurity has always been a time-consuming manual job, both in industry and in the lab. Now Graver Water Conditioning Co., a division of Union Tank Car Co., has automated the process with a continuous cycle analyzer that uses Millipore, a filtering material that will extract solids as infinitesimal as two parts in a billion of liquid.

The instrument, about the size of an office adding machine, works like this: Millipore tape is stamped with the time of sampling and fed into the filter chamber by a spool. A valve lets the liquid to be tested pass through the tape and out of the instrument into a measuring tank. When the tank reaches a given level, the valve reverses, and the sample can be flowed either back to the source or out into waste. Then the cycle repeats itself. The machine can be set to take samplings at intervals from one minute to a half hour.

As each sample passes through the filter the impurities leave a round stain. The degree of discoloration indicates the amount of impurity present.

Since the device runs unattended, it could serve for spotcheck quality control in chemical processing and the making of beverages. Round-the-clock checks of a city's water supply are another possibility. Philadelphia Electric Co.'s Eddystone Station has a unit to keep tabs on the high-purity water for the power plant cycle, and Graver says it has a backlog of orders from other power stations. Cost is around $3,000. **END**

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Time to Ease Up on the Brakes

Slowly and almost silently the nation's money managers have been moving away from the tight money policy they had pursued since mid-1958. They are doing so with the knowledge that the course they followed so courageously has attained its major objectives—the lessening of inflationary pressures and the maintenance of a stable dollar.

The Fed has not taken all the credit for the ebbing of inflationary pressures. Its officials admit that their task was made easier because the federal budget came into balance. In the past, the government's deficit spending hampered the Fed, so that it was going it alone and with one hand tied behind its back. Now, with the government's help, the Fed's policies have increased in effectiveness.

In fact, if the Fed had maintained its restrictive course this spring, it could have throttled our growth. The nation's industrial plant has been operating well below capacity and our rate of growth has been slowing down.

This is why the money managers have already eased up a little on the credit brakes. They did so at a time when most businessmen and many economists were still talking in terms of the "soaring 60s." But their relaxation to date has been minor, with credit easier only in relation to the extremely stringent conditions prevailing at the beginning of the year. Money, as any banker knows, is still "damn tight," and as any borrower knows, it is still very expensive.

Some further steps should be taken. There is no need to go to the extreme of easy money, but the economy could benefit by additional relaxation. This would stimulate growth without running the risks of a new inflationary threat. This is a view held by many "non-inflationists," including Arthur F. Burns, former chairman of the President's Council of Economic Advisers, who recently observed that "highly restrictive credit policies have served their purpose. For the time being they are no longer necessary. . . ."

The most obvious move the Fed could make is to cut the discount rate, which has been at 4% since last September, a time when the money managers were freely voicing fears about inflation.

This is also a good time for the Fed to wipe out the archaic differential in reserve requirements existing between the central reserve city banks in New York and Chicago, which have been squeezed the hardest, and banks in other reserve cities. Such a step may not have been wise as long as aggressive restraint was the order of the day. But now, after a period in which the money supply has shown almost no growth, the elimination of the differential would provide reserves where they are most needed.

In addition, a reduction in margin requirement on stock purchases is overdue, for the inflationary psychology that was so strong a force in the 1959 bull market has played itself out.

Fed. Chmn. William McC. Martin has stressed the need for flexibility in setting Fed policy. But for the most part, the Fed's flexibility has been utilized to push down on the credit brakes. A flexible policy aimed at easing credit pressures now would be in keeping with both the needs of the economy and the Fed's own operating concept.

If the economy shows sharp improvement later this year, then the Fed could turn to restraint again. But the immediate problem is to encourage growth, not stagnation, and this calls for further easing up on the brakes.

How High the Spy?

Modern technology changes all things, including the spy business. The Nathan Hales and Mata Haris give way to the U-2, the Midas and Samos earth satellites, and the bugged eagle in the American embassy in Moscow.

Indeed, in this swirl of technological progress, it becomes extremely difficult even to define what a spy is. Is the eye-in-the-sky a spy if it goes up 100 miles? Does it become a spy if it cruises at only 20 miles, 10 miles, five miles? One simple formula would be to define anything you can shoot down as a spy. Comrade Khrushchev apparently thought it would be gauche to call our U-2 a spy before he finally brought one down. He has not objected to our sending surveillance satellites over his territory, nor we to his over ours.

But it becomes a most complex mathematical problem in relativity theory to say when a very high-flying satellite is actually over some nation's territory. Is this to be done by calculating an imaginary perpendicular, stuck up in space like a radio antenna from the spinning globe, which a satellite, orbiting on its own course, periodically intersects—or what? Assuming you had a missile that could hit it, would it be an act of aggression to shoot down that satellite if it were found to be over its mother country at the time of actual impact?

And what about the bugged eagle hugging the ground in the foreign embassy? Can he be shot down? Can he even be spoken to rudely by the people he is bugging? Stalin apparently asked that a British admiral be sent home because he made insulting remarks about the Russians (he said they were "barbarians") into the electronic detector.

The one hope that emerges from this technological revolution of our time is that, in a world in which there is no place to hide, both spying and war may become obsolete.

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